Route and Site Selection Division

Environmental Assessment
Supply to the Elliot Lake Area

November 1980

Report No. 80241

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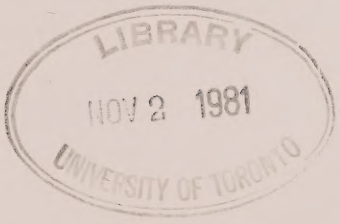

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TABLE OF CONTENTS

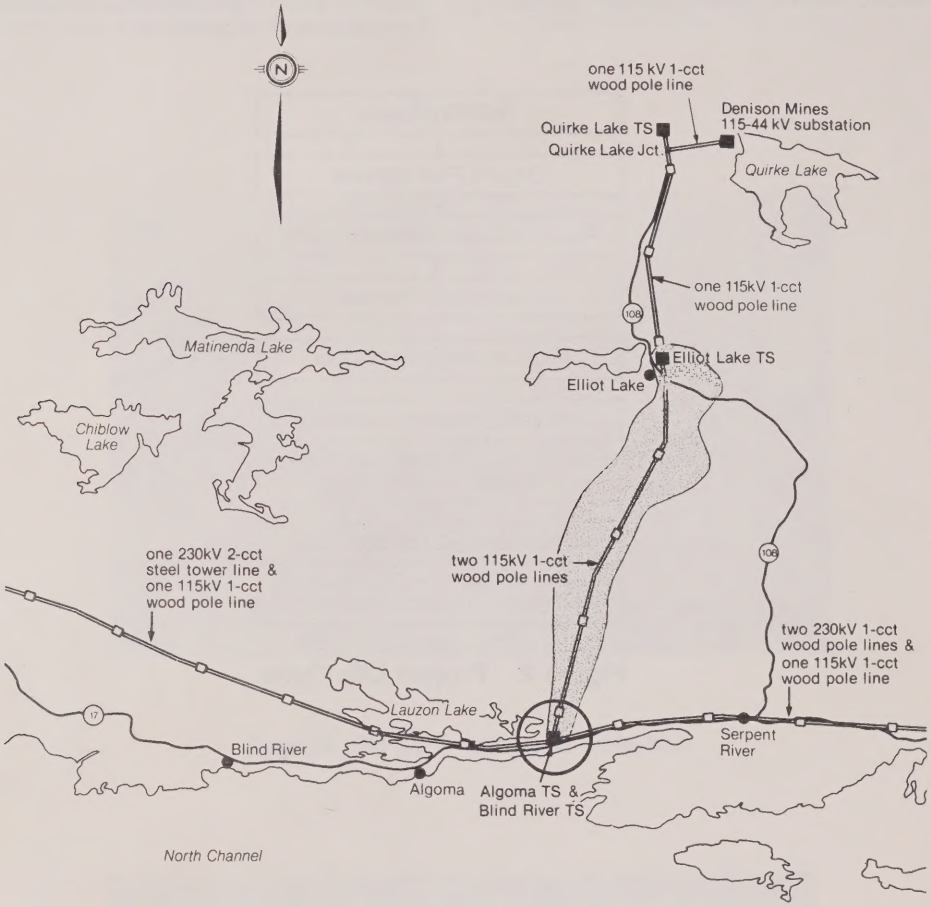
APPENDICES

LIST OF FIGURES

LIST OF TABLES

1.0 Introduction

The mining companies in the Elliot Lake area have advised Ontario Hydro that their electrical power requirements will increase substantially during the period 1978–1983. This increase in mining activity will also affect the development of the town of Elliot Lake. The existing electrical facilities supplying the area, which are shown in Figure 1, will be unable to meet the forecasted needs therefore additional transmission line and transformer station (TS) facilities are required to be in service by 1983.



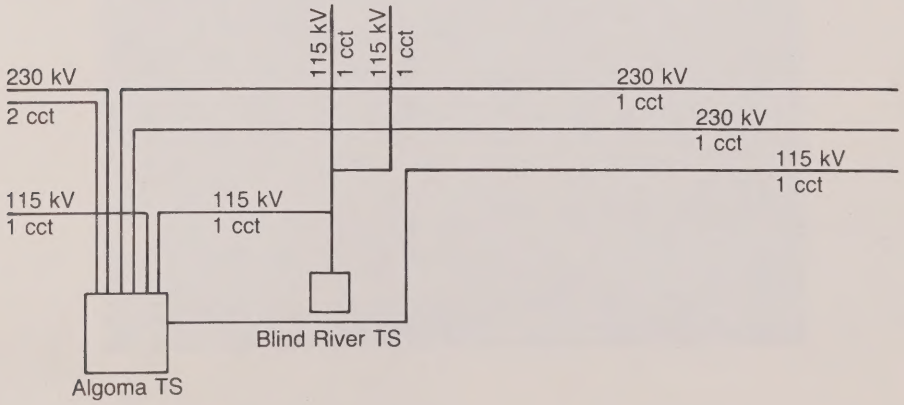


Figure 1 Supply to the Elliot Lake Area
Existing 230 kV and 115 kV Transmission Facilities

Studies to select the location of the proposed facilities were conducted in co-operation with the public and took place between the fall, 1978, and the fall, 1980. They examined power system options and location alternatives using environmental, economic and engineering information resulting in the identification of a preferred transmission line route and TS site.

This report, which describes the studies, was prepared for submission to the Ministry of the Environment in compliance with The Environmental Assessment Act, 1975.

The major phases in the life cycle of a transmission system facility, from planning through to operation, are illustrated in Figure 2.

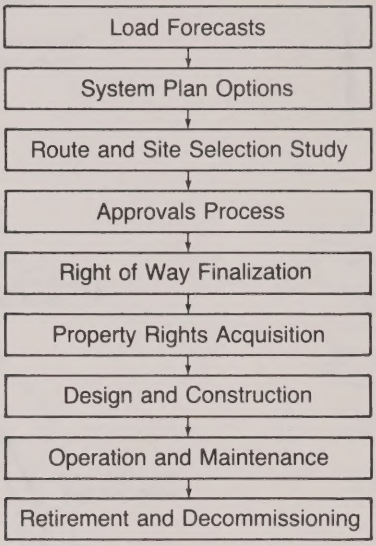


Figure 2 Project Life Cycle

2.0 The Undertaking

The undertaking is the acquisition of property rights and the construction, operation and maintenance of a 230–44 kilovolt (KV) TS in the town of Elliot Lake, together with a single circuit 230 kV wood pole transmission line between Algoma TS and the new Elliot Lake TS.

Photographs of a typical 230–44 kV TS and 230 kV single circuit wood pole line are shown in Figure 3.

Figure 4 shows the proposed site for the station, which will occupy an area of approximately 2 hectares (excluding any area required for landscaping). Figure 5 shows the proposed route of the wood pole transmission line, which will be approximately 25 kilometres in length. The facilities are required to be in service by 1983. A detailed description of the undertaking is included in Appendix B.

Figure 3

Typical 230 kV 1-cct wood pole line

Typical Transformer Station
Aerial View

3.0 Purpose of the Undertaking

The proposed new transformer station and associated transmission line are required to supply the forecast electrical energy requirements of the Elliot Lake area.

3.1 Load Forecast

The electrical loads in the Elliot Lake-Quirke Lake area consist mainly of two uranium mines, Rio Algom Mines Limited and Denison Mines Limited (both located in the Quirke Lake area) and the town of Elliot Lake. The mines are supplied from their customer owned 115–44 kV step-down facilities and the town of Elliot Lake is supplied from the present Elliot Lake TS. Both mines have indicated that their electrical power requirements will increase substantially at their existing facilities near Quirke Lake during the period 1978 to 1983. In addition, Rio Algom Mines Limited is reopening Stanleigh Mine, which is expected to be in full production by 1983, and is considering reopening Milliken Mine in 1987. Both these mines are located near Elliot Lake. The increased mining activity is also expected to result in a substantial increase in the electrical power requirements of the town of Elliot Lake.

As a result of the mine expansion programme, total electrical load in the Elliot Lake-Quirke Lake area is forecast to grow from 114 megavolt ampere (MVA) in 1979 to approximately 200 MVA in 1983. This includes a load increase in the Elliot Lake area from 28 MVA in 1979 to approximately 80 MVA in 1983. This rapid increase in loads will overload the existing facilities beyond their present design capabilities.

3.2 Existing Supply Facilities

The electrical loads in the Elliot Lake area are presently serviced by a 115–44 kV TS supplied at 115 kV from Algoma TS. The existing 115 kV transmission system consists of a single-circuit 115 kV wood pole line from Algoma TS to Blind River TS and two single-circuit wood pole lines, operating in parallel, from Blind River TS to Elliot Lake TS. A detailed description of the existing transmission and transformation facilities supplying the Elliot Lake area is given in Appendix A.

3.3 System Plan Options

Four alternative methods of augmenting the existing facilities to supply the forecast load were considered and evaluated in terms of economics and technical aspects. These alternatives considered various ways of enlarging and upgrading the existing 115 kV system in additon to the provision of a new 230 kV system supply. The alternatives are more fully discussed and evaluated in Appendix A. The preferred system alternative is to build a new 230–44 kV transformer station near Elliot Lake and a new single circuit 230 kV line from a junction adjacent to Algoma TS to Elliot Lake in 1983. A second single circuit 230 kV line tapped off the future 230 kV Hanmer TS to Mississagi TS line will be required in 1985 (see Appendix F). The new TS and associated single circuit line proposed for 1983 are the subject of this report. It is intended to cover the second 230 kV single circuit line as part of the Hanmer x Mississagi Project at a later date. A 'null' alternative was considered non-acceptable as it would restrict the growth of the mining community and the town of Elliot Lake. The mine expansion program has already been the subject of a full Environmental Assessment.

Figure 4 Elliot Lake T.S. Area

Legend

Proposed 230 kV line

Scale 1" =300' ±

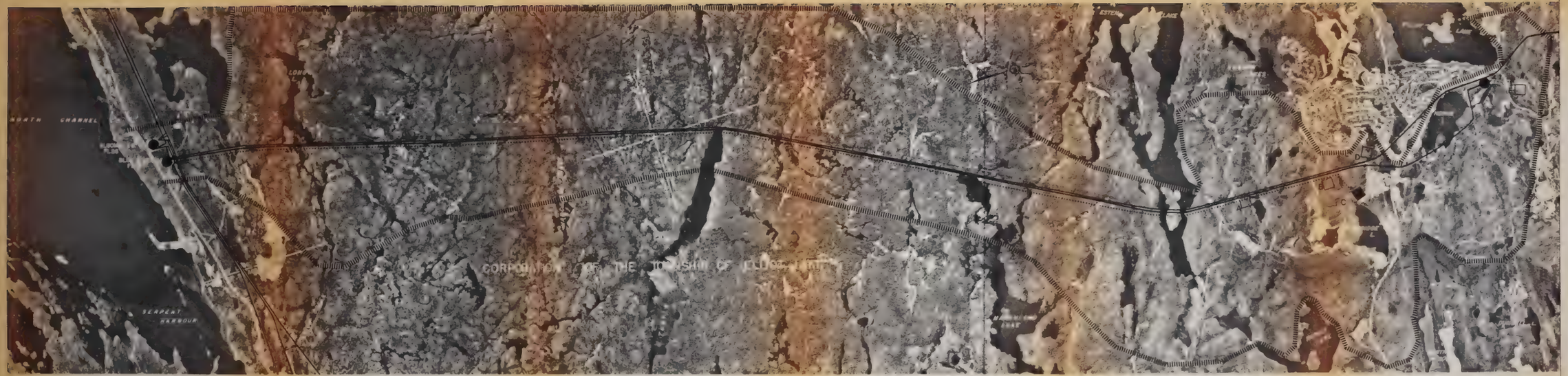


Fig. 5 Algoma TS to New Elliot Lake TS
Proposed Route and Site Alternatives

Legend

- Study Area Boundary
- Existing 115kV Transmission Lines
- Proposed 230kV Route Alternative
- Alternate transformer station sites
- Proposed transformer station site
- Existing transformer station

1000 m 500 m 0 1000 m

Scale 1:50,000

4.0 Alternative Methods of Carrying out the Undertaking

There are several ways of carrying out the transmission portion of the undertaking i.e., underground cables, wood/steel poles, steel lattice towers; but the only alternative to a new transformer station would be to extend the existing facilities.

4.1 Underground Cable

Due to the rugged terrain, shallow overburden and the distance between Algoma TS and Elliot Lake, basic economics (at least a tenfold cost increase) ruled out the use of underground cables as a means of supplying the new Elliot Lake TS from Algoma TS.

4.2 Structure Type

Designing a transmission line is a complex process of determining structure locations on a given route, so as to use as fully as possible the design capacity of the components within given technical, safety and environmental constraints and to meet the required system reliability standards. Overhead transmission lines are generally supported on wood pole, steel pole, or steel lattice tower structures. There are general relationships between tower height, span length, and width of right-of-way (ROW). For example, at a given conductor tension, the longer the span, the fewer the towers, but the towers are higher and the ROW is usually wider because of the increased conductor sag and resulting swing out from wind velocity.

Figure 6 shows typical rights-of-way for a single circuit 230 kV line using the three alternative types of structures combined with the existing 115 kV line. Also included is information relating to the approximate height, cost and span length of each combination. Cost differentials are mainly attributable to increased material and construction costs.

Wood poles are structurally not as strong as either steel poles or lattice towers, and therefore shorter span lengths are required. This results in more structures and foundations than for either of the other alternatives. However, the foundations for wood poles are generally much simpler than those for steel poles or lattice towers. Steel pole structures are more suited to urban environments where severe land use restrictions exist.

Notwithstanding the visual effects, impacts on the physical environment will be relatively consistent regardless of whether wood poles or lattice towers are installed. For example, the impact on timber production will not vary since the amount of ROW to be cleared and withdrawn from production will be consistent for either structure type. However, site specific environmental concerns during the construction phase do vary. Potential for compaction, erosion, change in water quality or loss of groundcover are more severe due to the heavier construction equipment required for the construction of lattice towers.

The preceding economic, technical and environmental considerations indicate that wood-pole construction would be the preferred installation for this project.

4.3 Rights-of-Way

The two alternatives considered were either to expand the existing 115 kV ROW to accommodate the new line or to construct an entirely new ROW. It is possible to reduce the total land requirement by combining lines on one ROW with a consequential reduction in forest clearing. Where fly-in lakes are present, it is helpful to minimize the impact on light aircraft by paralleling existing facilities. It is more economical and efficient to maintain lines on one ROW. From transmission operations security point of view it would be acceptable to locate the new 230 kV line on the existing 115 kV ROW as the function and terminal points are not the same.

By combining the existing and the new line on one ROW, existing access roads would be utilized, resulting in minimal construction on the roads themselves. There is some potential for rutting and compaction. However, as these areas have already been disturbed this is not considered to be of major importance.

Consequently, unless there are specific land use and natural environment impacts, a combined ROW would be preferred for technical, economic, environmental and management reasons.

4.4 Route and Site Location

The most acceptable method of carrying out the undertaking was determined to be the construction of a new 230–44 kV TS and a single circuit 230 kV wood pole transmission line, preferably on an expanded ROW. It then became necessary to determine the impacts associated with the undertaking, in identifying the site and, if necessary, where there should be separate ROWs. A detailed description of the undertaking is included in Appendix B.

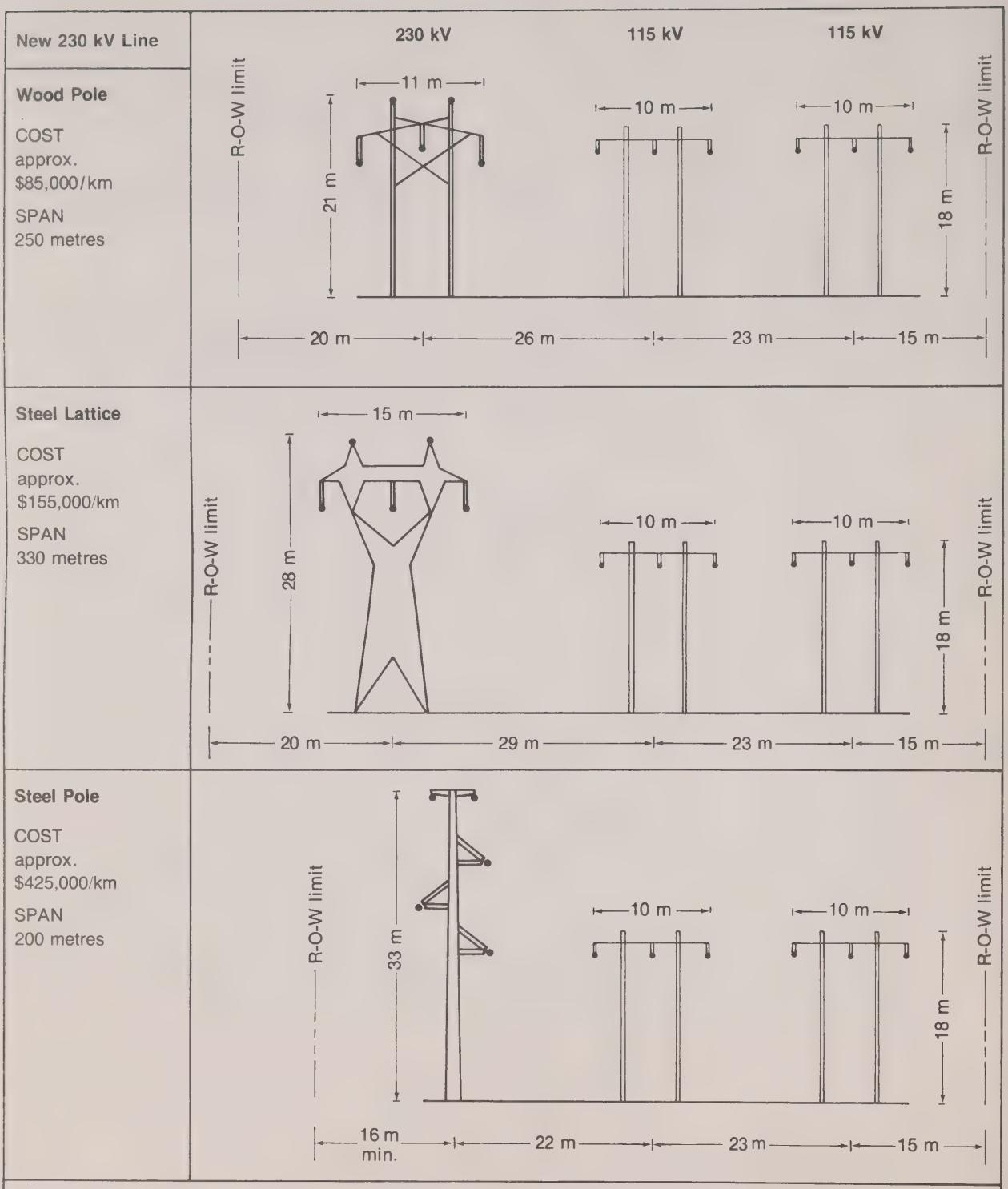


Figure 6 **Typical Rights-Of-Way**
Alternative Tower Types

5.0 The Study Area

A study area was developed to include the two existing single circuit wood pole transmission lines and to allow sufficient room for alternatives to be considered to the existing alignment. The limits were determined according to the location of lakes and other significant landforms on either side of the existing ROW. In the vicinity of the Elliot Lake townsite, the location of existing development and the proposed new town development were considered. The boundary of the study area is referenced in Figure 5.

6.0 The Study Approach

This section of the report deals with the route and site selection process, examination of the environmental and social impacts and the subsequent analysis and evaluation leading to the location of a preferred TS site and transmission line route. Activities associated with the study process are outlined in Figure 7 and are discussed in greater detail in the following sections.

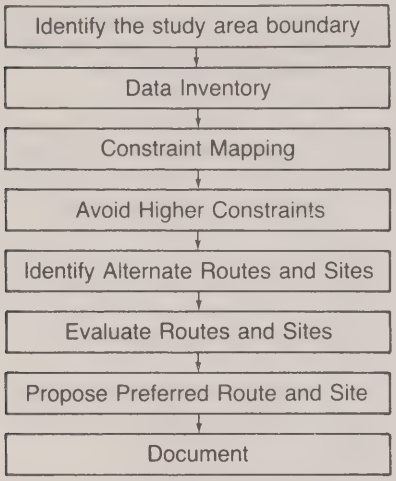


Figure 7 Route and Site Selection Process

6.1 Preparation of a Land Use and Natural Environment Inventory

Once the study area was identified, data was collected for the natural resource and land use characteristics located within the study area. This data was collected using published maps and documents, up-to-date aerial photography, roadside and aerial inspection and contact with staff from provincial and local government agencies familiar within the study area. The following environmental factors were considered: land use, visual effects, recreation, aggregate resources, drainage patterns, forest vegetation and environmentally sensitive areas. No other data was considered significant enough for inclusion by the contacts made during the study. A detailed description with accompanying maps (scale 1:25,000) of these environmental factors is included in Appendix D.

6.2 Social Impacts

For the social assessment, the project characteristics were compared to the community characteristics to determine if potential effects could be anticipated. The following factors were reviewed:

- History of the area
- Economic base
- Employment
- Transportation
- Housing
- Fire protection
- Recreation
- Social aspects
- Regional planning

Details on these factors are available in Appendix C.

6.3 Public Involvement

The public was involved in the study to ensure that local interests and concerns were identified and considered throughout the planning and decision-making process.

Early in the study, a community profile was conducted to identify key local officials and interest groups and document any community issues and attitudes relevant to the study. Based on this information, a public involvement program was developed to reflect the needs and interests of the local community.

A citizens' liaison committee, representing a broad cross-section of local interests, was formed to work with the Hydro project team throughout the study. The committee met six times during the course of the study, assisting in the review of data, identification and evaluation of study alternatives and in the selection of a preferred route and site. A complete list of committee members and government ministry representatives is included in Appendix E.

In addition to the citizen's liaison committee, other channels for involvement included presentations to the Municipal Council and Planning Board, discussions with provincial government representatives, regular status reports, press releases and a permanent information kiosk located in the Elliot Lake municipal office.

7.0 Identification of Route and Site Alternatives

7.1 TS Site Requirements

A general zone in the Elliot Lake area was developed for the purpose of identifying alternative TS sites. The selection criteria used for identifying sites was as follows:

- a location that minimizes visual impact while avoiding built-up areas, proposed developments and natural environmental resources.
- a location, reasonably close to the existing 115 kV ROW and the existing 44 kV network, with its transmission ingress and egress avoiding significant land use and natural environmental resources.
- to improve grounding capabilities in an area where bedrock is predominant, a location should be within 300 metres (m) of an area having a high water table, or a body of water,
- a location where there is appropriate access in order to reduce costs of construction; offers potential year-round access for security in operation and easier maintenance; and is accessible with respect to the delivery of heavy transformers.

Through the application of the above criteria five alternative TS sites were identified as shown in Figure 5.

7.2 Natural Environment

The environmental data maps were each analysed to determine the level of significant data which could be considered a constraint against the location of route and site alternatives. For example, analysis of the land use data map indicated that several of the proposed land use designations could be consolidated into one proposed land use designation. Also, analysis of the forest vegetation map revealed that only the wetland areas were significant enough to warrant inclusion as a constraint (see Appendix D). As a result of this analysis a constraint map was produced (see Figure 8). The environmental data was reviewed by the Citizens' Liaison Committee for accuracy and completeness.

Routes:

The constraint map indicated only several minor constraints along the existing ROW which were largely associated with lakes and wetlands. Two route alternatives were identified, one paralleling the existing transmission line on the east side and the other on the west side.

Additional route alternatives were not considered environmentally desirable because:

- a new ROW would create additional visual impact by decentralizing the Hydro facilities on the landscape;
- a new ROW would require an additional 37 m of forest clearance while paralleling the existing ROW would require only an additional 31 m of forest clearance;
- reconstruction of the access roads to the existing ROW could create less environmental impact than constructing access roads to an entirely new ROW;
- members of the liaison committee agreed that the proposed route should parallel the existing ROW as much as possible.

Sites:

Five sites were identified which did not conflict with the environmental constraints. However, with regard to Site C, a short section of line, approximately 1 km in length, from the existing ROW, would be required. Similar to the site alternatives, this portion of line did not conflict with the environmental constraints.

7.3 Public Involvement

The five alternative sites and two associated routes were discussed and agreed upon with members of the citizens' committee before being presented for public review at a local information centre on June 18 and 19, 1979, in Elliot Lake.

The outcome of this public review was a preliminary preference by the Elliot Lake Planning Board for Sites A and E. There was general agreement with the proposal of paralleling the existing transmission line ROW.

8.0 Evaluation of Alternative Routes and Sites

8.1 Land Use and Natural Environment

8.1.1 Route Comparisons

The two route alternatives were compared by examining visually sensitive areas, recreation, forest vegetation and environmentally sensitive areas, which are identified on the constraint map (see Figure 8). Neither alternative significantly affected existing and proposed land use, drainage or aggregate resources.

Since both alternatives parallel the existing ROW, the environmental impact of each was similar. Both alternatives had similar effects on visually sensitive areas identified at Esten Lake and near the Algoma TS. Similarly, each crosses a recreational canoe route between Esten Lake and Marshland Lake. The alternatives would have a low impact on areas of good timber production capability, with existing stands of white birch, white pine and jack pine being the dominant species.

The only identifiable difference between the two alternatives concerns a waterfowl habitat area (Class 3, Canada Land Inventory) which infringes on the eastern alternative, thus making the western alternative slightly more advantageous. However, staff from the Blind River area of the Ministry of Natural Resources indicated that the quality of the habitat in the area was not significant enough to warrant a major concern against the construction of a parallel transmission line.

8.1.2 Alternative Site Comparisons

The five site alternatives (see Figure 5) were compared by examining existing and proposed land use, forest vegetation, visual effects and drainage (there were no effects on aggregate, recreation or environmentally sensitive areas, for any of the sites).

The site comparison is summarized in Table 1.

Of the five sites, Sites A, C and D were all equally preferable. Sites B and E were less preferable due to a new subdivision located near Site B and a sensitive wetland area adjacent to Site E which would be affected by the transmission line.

8.2 Economics

Table 2 shows the economic comparison of developing the five sites when considering the development of the site, 230 kV ingress and 44 kV egress costs. The site development costs cover excavation and earthworks required to achieve a level site and construction of an access road. The 230 kV transmission line costs were based upon the length of the line from the junction at Algoma TS to each of the alternative sites. From Algoma TS to Esten Lake, 230 kV costs were similar and no differential costs were determined for the east and west alternatives. The 44 kV costs are the capital cost associated with providing five feeders from each alternative site to the existing networks supplying the load centres in Elliot Lake and the mines. The 44 kV electrical losses should not be significantly different for any of the sites, with the exception of Site A, for which the losses are higher than for the other alternatives.

8.3 Public Input

On reviewing the study evaluation, the opinion of the citizens' liaison committee was that Site A was preferable, although Site C still warranted consideration since it was compatible with existing and proposed development for the area.

At this stage, Elliot Lake Planning Board preferred Site A, since it was away from the townsite and was compatible with proposed development for the area. They agreed with Hydro's proposal to parallel the existing 115 kV ROW on the east side.

Local residents were informed of the route and site evaluations through a status report and second information centre. Only one public response was received, indicating a preference for Site C.

Public commentary regarding the site alterantives is summarized in Table 3.

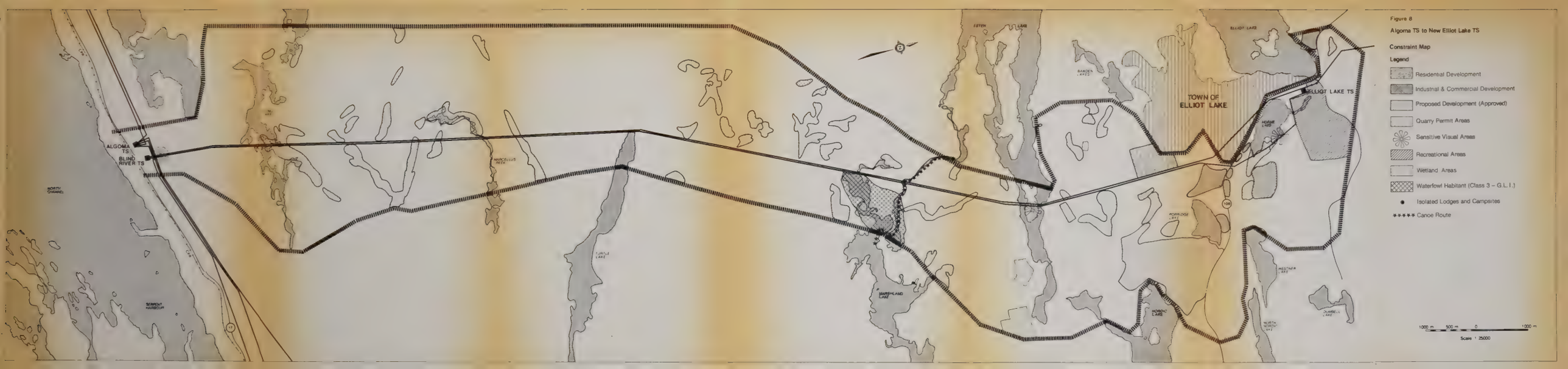

ALGOMA TS
BLIND RIVER TS
TOWN OF ELLIOT LAKE
ELLIOT LAKE TS
MARCELLUS RIVER
TURTLE LAKE
MARSHLAND LAKE
HORNE LAKE
PORRIDGE LAKE
MESSNER LAKE
NORTH CHANNEL
SERPENT HARBOUR
ESTEN LAKE
BADGER LAKES
ELLIOT LAKE
Figure 8
Algoma TS to New Elliot Lake TS
Constraint Map
Legend
Residential Development
Industrial & Commercial Development
Proposed Development (Approved)
Quarry Permit Areas
Sensitive Visual Areas
Recreational Areas
Wetland Areas
Waterfowl Habitant (Class 3 – G.L.I.)
Isolated Lodges and Campsites
***** Canoe Route
1000 m 500 m 0 1000 m
Scale 1 25000

Table 1
Environmental Data – Site Evaluation

	Site A	Site B	Site C *	Site D	Site E
Land Use	• located near area designated for waste disposal • crown land	• new residential subdivision within 90 m of site • one owner: Town of Elliot Lake • access through subdivision	• located near area designated for industrial development • one owner: Town of Elliot Lake	• located near area designated industrial • one owner: Town of Elliot Lake	• one owner: Silvermaque Mining Ltd.
Forest Vegetation	• immature disturbed forest • species: hemlock, sugar maple, poplar, white birch	• immature disturbed forest • species: sugar and red maple, hemlock, white birch, poplar	• immature disturbed forest • species: sugar and red maple, white birch, poplar	• mature to immature forest • species hemlock yellow birch, sugar maple	• mature to immature forest • species poplar, white birch, balsam, sugar maple • adjacent to sensitive wetland area which would be disturbed by additional transmission line into site
Visual Effects	• isolated, therefore, minimum impact	• nearby subdivision, potential for medium impact	• isolated, therefore, minimum impact	• blends in with industrial subdivision, therefore, minimum impact	• near Hwy. 108 and milliken Road, therefore, medium impact
Drainage	• graded and filled with sandy soils • high and dry • thin sandy soils	• high and dry	• site drainage to be away from Porridge Lake (see Figure 4)	• high and dry	• high and dry with steep slope towards wetland area

* Preferred Site

Table 2
Economic Evaluation of Sites
(Present Worth 1983 – Thousands of Dollars)**

	Site A	Site B	Site C	Site D	Site E
44 kV feeders	660	372	368	307	404
230 kV transmission line	2.355	2.554	2.594	2.664	2.999
Station costs	7.047*	6.822	6.750	6.791	7.456
Total	10.062	9.748	9.712	9.762	10.859
Variance from Site C	350	36	0	50	1.147

* $200,000 allowed for road upgrading

** Broad estimates used for comparison purposes.

Table 3
Public Commentary – TS Site Locations

The local public has been kept informed and involved in the study through a variety of channels

- Ongoing discussions with Elliot Lake Municipal Council and Planning Board
- Consultation with local provincial government representatives
- Local citizens' liaison committee (representing the interests and concerns of the study area)
- Two public information centres
- An information stand in Elliot Lake municipal office
- Regular status reports
- Press releases

Publics	Site A	Site B	Site C*	Site D	Site E
Elliot Lake Planning Board (representing the interests of Elliot Lake Council)	One of the originally preferred sites because of its distance from the townsite	Least preferred since it is near a residential (visual) impact	Elliot Lake Planning Board passed a resolution endorsing Site "C" as an acceptable alternative This was formally approved by Elliot Lake Town Council	Too close to the townsite	One of the alternatives originally considered because of its distance from the town
Citizens' Liaison Committee	One of the two preferred alternatives		The Citizens' Committee unanimously recommended Site "C" as the study alternative		
Provincial Government representatives planning consultants			Site "C" was considered to be compatible with existing and proposed development for the area		
General Public			The only formal comment from the general public was an indicated preference for Site "C"		

*Preferred Site

9.0 Results of Evaluation of Alternative Routes and Sites and Possible Mitigating Measures

9.1 Land Use and Natural Environment

The results of the environmental analysis and evaluation did not clearly indicate a preference towards a particular route or site. Both Sites A and C were considered to be preferable. Similarly, both the eastern and western route alternatives were considered to be preferable. Final selection of a route and site would be dependent on other criteria, i.e. technical, economic or social.

No specific impacts were associated with the proposed site which would require mitigating measures beyond those outlined in the Ontario Hydro Construction and Site Restoration Guidelines. However, several minor impacts are associated with the proposed route and possible mitigation measures are outlined in Table 4.

9.2 Technical

Hydro staff examined both site alternatives A and C in detail and concluded that Site C was preferred for the following reasons:

- It was closer to the load centre and consequently the 44 kV line losses would be less than for Site A. The additional length of 230 kV line between Sites A and C would not appreciably increase the 230 kV line losses.
- The access road to Site C would be shorter and consequently require less maintenance. Maintenance could be a problem with access to Site A as logging trucks will be using the same road.
- Between Site A and the townsite, maintenance on the 44 kV line would be difficult due to the rough terrain and lack of access roads.

Both route alternatives were considered and it was decided that the eastern route was preferred for the following reasons:

- The preferred TS site, Site C, is located east of the existing ROW and routing the line on the eastern alternative would avoid a line crossover which technically is not desirable.
- The spans required to cross Esten Lake are shorter on the eastern side of the existing ROW.

9.3 Social Impact Evaluation

Project characteristics were reviewed for the property acquisition, clearing, operation and maintenance stages for both the transmission line route and transformer station site.

With respect to property acquisition, the transmission line alternative is located either on property owned by the Town of Elliot Lake or Crown land with a number of corporate interests holding mineral rights.

The clearing operations would result in the employment of a minimum of 40–50 persons working in Ontario Hydro supervised crews. Most of the workforce would be from the Elliot Lake and Blind River area. No temporary or permanent immigrants are expected.

To construct the transmission line, a labour force of 45–60 people would be required. Approximately 10 per cent of this labour force would be hired locally. Most of the non-locally hired workers will be Northern Construction Zone staff who would be expected to find temporary accommodation in local motels.

For the construction of the new 230–44 kV TS, a peak workforce of 25 persons would be expected. Depending on labour availablility, up to 40 per cent of the workforce could be hired locally. Private contractors from the Elliot Lake and Blind River areas could be involved in the supply and transportation of construction materials.

No significant social impacts are anticipated with respect to TS Sites A, C, D or E as they are not located close to residential areas. For Site B potential impacts to the adjacent residential area would be short term or minor.

As a result of the undertaking, the following potential effects upon the communities can be considered.

- The letting of local contracts for forestry work, the supply of aggregate for the construction of access roads and the transformer station, the supply of concrete and treating of wood poles would have a positive effect on the local economic base. This effect would be minor and temporary.
- Motels in Elliot Lake are currently full or almost full year round. Under these conditions it may be difficult for transmission line and transformer station construction crews to find accommodation. In Blind River there appear to be sufficient rooms available for construction crews during the non-summer months, although this would depend on Eldorado Nuclear Limited's construction schedule for their new uranium hexafluoride refinery in Blind River. Increased occupancy is seen as a potential positive effect. Tourism may be negatively affected as a result of the occupancy of hotel rooms by construction workers. However, this effect will be short termed.
- Local temporary employment is expected to increase slightly although local hiring will be dependent on trades availability, union hiring practices and the construction schedule.
- While the burning of non-salvable vegetation presents a potential fire hazard, the possibility of an uncontrolled burn is minimal because the burning will occur in the fall and spring when fire hazards are low. Ontario Hydro forestry contractors are required to have ready access to fire fighting equipment and carry liability insurance.

No significant social impacts are anticipated with Site C due to its compatability with the surrounding area (industrial park) and its relatively short construction schedule.

The potential social and community project-related effects identified in the study are short-term or insignificant. In general, the construction and energizing of the facility could contribute to increased socio-economic benefits. The construction of the Algoma TS to Elliot Lake TS 230 kV transmission line and the new Elliot Lake 230–44 kV TS would not be expected to result in significant social impact.

Table 4
Algoma TS x Elliot Lake TS
Potential Natural Environmental Effects and
Possible Mitigation Along the Proposed Route

Area of Concern Identified Along the Proposed Route	Potential Effects	Possible Mitigation
Residential Development	• visual impact of the transmission line to resident	• view of the line can be restricted by vegetative screening
Steep Slopes	• soil disturbance and movement • loss of soil base and nutrients which support vegetation	• avoid locating structures and access roads on steeply sloping areas. Span valleys where feasible. • confine vehicular traffic to existing access routes • retain as much vegetation as possible on extreme slopes • immediately seed a cover crop on the ROW following construction • special erosion control techniques may be used where the anticipated impact will be high, i.e. mulches, jute or plastic matting, etc. • vegetation may be cut and removed from the ROW manually on especially critical areas Skidding can be avoided.
Canoe Route	• visual impact of the transmission line to canoeists	• provide a vegetative screen along the watercourse • maximize the distance of the structures back from the water's edge • leave riparian vegetation intact where possible
Stream Crossings and Lakes	• stream bank erosion • production of sediment • removal of bank vegetation and loss of shade cover • disturbance to the stream bottom by road access and/or crossings i.e. heavy machines or culverts	• where feasible minimize crossings by approaching the stream from both ends of the ROW • when necessary to cross creeks or streams, use only the proper crossing technique as dictated by field inspection • vegetation can be retained on stream banks. Manual cutting and removal of vegetation may be carried out in especially critical areas • organic debris should be kept from entering any watercourse • vegetative buffer strips can be retained along lakeshores and in narrows between lakes. Selective cutting and tree pruning can be employed • skidding may be restricted on stream or river banks and close to a lakeshore • immediate site restoration at all sensitive crossings can lessen construction impacts
Wetlands	• rutting and mixing of organic and mineral soils • alteration to drainage patterns • alteration to a biological community with diverse wildlife and plant habitat • removal of vegetation	• winter construction is recommended to minimize construction impacts Ice roads should be used where possible especially when no permanent roads will be installed. • permanent gravel roads should not impede water flow; the use of equalizing culverts, or the construction of the road at a minimum height when the water is low will accomplish this • restrict off-road traffic and avoid rutting • dead snags that will not pose a line security problem can be retained • use a minimum size work area and restrict activities to the immediate area • sediment-laden water can be filtered before being allowed to re-enter the wetland system

9.4 Public Input

After considering all the site evaluations and the comparative advantages and disadvantages of Sites A and C, the Citizens' Liaison Committee passed a unanimous resolution recommending Site C as their preferred site alternative. They also endorsed the proposal to parallel the existing 115 kV ROW on the east side. (The committee's resolution is documented in Appendix E).

Recognizing that the resolution was not in agreement with the Planning Board's preference, the committee elected a spokesman to discuss their recommendation with the Board.

Following the committee's presentation and further examination of Sites A and C, the Planning Board passed a resolution supporting Site C as the preferred site alternative. This resolution was formally endorsed by Elliot Lake Council (Appendix E).

9.5 Provincial Ministries

All relevant ministry representatives were informed of the study proposals. No comments were received, with the exception of the Ministry of the Environment in Sault Ste. Marie. Their comments, made during a telephone conversation, were related to the site drainage pattern in the vicinity of to Porridge Lake. They were later assured that drainage would be away from the lake area (see Figure 4).

10.0 Rationale for Selection of the Undertaking

As a result of the study, it is recommended that Ontario Hydro construct the following facilities.

- a 230–44 kV TS to be located east of the existing 115 kV transmission line ROW and adjacent to the Pirini Road Industrial Estate (Figure 4).
- a single circuit 230 kV wood pole transmission line from a junction adjacent to Algoma TS to the new Elliot Lake TS along the route identified on the map, Figure 5. The route will be to the east and wherever possible, adjacent to the existing 115 kV lines. Due to the long span crossing of the western tip of Marshland Lake, two steel lattice towers may be required.

The principal reasons for the recommendation are:

- the additional facilities are required to meet the increasing demand for electrical power in the Elliot Lake area;
- the chosen TS site is in an area where the probability of causing significant detrimental changes is minimal;
- the route is preferable in terms of facilitating connections to existing facilities, construction access and ROW maintenance;
- land use impacts are minimized in terms of new severances;
- the route involves minimal impacts on natural resources;
- social impacts are either temporary or insignificant;
- there was no provincial government or public opposition to the proposal and support for the route and TS site was endorsed by the Citizens' Liaison Committee. In addition, the location of the TS site was confirmed in an Elliot Lake Planning Board resolution (Resolution # 130/79) and formally endorsed by Elliot Lake Council in Resolution # 1063/79.

11.0 Post-Approval Activities

Following government approval of the site and route, detailed plans will be developed to locate structures and access roads and to include the clearing and restoration of the ROW. Prior to and during the construction phase, Hydro will liaise with local ministry representatives in the identification of any outstanding sensitive areas that have not been identified during the course of this study. These areas will be discussed and agreements reached on proposed mitigation measures that Ontario Hydro will carry out.

The construction of the line and transformer station will follow the Construction and Site Restoration Guidelines dated February 15, 1980, which are filed with the Ministry of Environment. A protocol associated with noise levels is also being finalized between Ontario Hydro and the Ministry of Environment. This protocol is to be referenced in the guidelines.

All the above information, including information about the electrical effects on the environment due to the operation of the transmission line, will be sent to the Approvals Branch of the Ministry of the Environment for filing in the public record.

Contact will be maintained, through field visits and letters, with the local MP, MPP, municipal officials, citizens' committee members and the study mailing list throughout the construction phase of the project. Press releases will be issued at significant stages to inform the local public of the project's status. In addition, the Hydro information kiosk located in the municipal office will continue to provide an information exchange channel throughout the project's duration.

APPENDICES

Appendix A
System Planning Considerations

A.1 Existing Supply Facilities

The 115–44 kV Elliot Lake TS, servicing the Elliot Lake area, is currently supplied at 115 kV from Algoma TS. The existing 115 kV transmission system which supplies this station from Algoma TS consists of a single circuit 115 kV wood pole line from Algoma TS to Blind River TS (0.4 km), and two single circuit wood pole lines, operating in parallel, from Blind River TS to Elliot Lake TS (25 km). The existing supply facilities are shown in Figure 1.

A.2 Power Requirements and Adequacy of Existing Facilities

(i) Power Requirements

The loads in the Elliot Lake-Quirke Lake area consist mainly of two uranium mines, Rio Algom Mines Limited and Denison Mines Limited (both located in the Quirke Lake area) and the Town of Elliot Lake. The mines are supplied from their customer owned 115–44 kV step down facilities and the Town of Elliot Lake and the surrounding area are supplied from Elliot Lake TS. Both mines have indicated that their electrical power requirements will increase substantially at their existing facilities near Quirke Lake during the period 1978 to 1983. In addition, Rio Algom Mines Limited is reopening Stanleigh Mine, which is expected to be in full production by 1983, and is considering reopening Milliken Mine in 1987. Both these mines are located near Elliot Lake. The increased mining activity is also expected to result in a substantial increase in the electric power requirements of the town of Elliot Lake.

The actual maximum 1979–80 winter peak load and forecast of 1980–1985 winter peak loads, supplied from the Algoma TS x Elliot Lake TS 115 kV transmission lines are given in Table 5. The total load, as shown in Table 5, is expected to increase from 113.6 MVA in 1979 to 207 MVA in 1985. The large increase in the load on Elliot Lake TS in 1983 is based on bringing the Stanleigh Mine into full operation in 1983.

(ii) Adequacy of Existing Facilities

Algoma TS: 230–115 kV Transformation

The load in the Algoma area, which extends from Thessalon in the west to Espanola in the east, is supplied from Rayner GS, Red Rock GS and the 230–115 kV transformation at Algoma TS. The two generating stations can provide approximately six average MW of dependable power. The 230–115 kV transformation at Algoma TS is provided by two 125 MVA autotransformers having an estimated summer firm rating of approximately 160 to 165 MVA. The forecast maximum summer loads on the 115 kV stations in the Algoma area are shown in Table 6. As can be seen from this table, the forecast 115 kV load will exceed the total available 115 kV capacity of approximately 167–172 MVA during the summer of 1983.

Elliot Lake TS

The existing 115–44 kV transformation at Elliot Lake was provided in the past by two 15 MVA transformers, with a winter computed firm rating of 27 MVA. During 1979, this firm rating was exceeded and as an interim measure a 25/41 MVA, 115–44 kV transformer was installed, increasing the station's winter computed firm rating to 54 MVA. As shown in Table 5, the forecast load will again exceed the station's computed firm rating in 1983 and further relief will be required at that time.

Algoma TS x Blind River TS

The existing 115 kV circuit from Algoma TS to Blind River TS was retensioned in 1978 to provide summer and winter design capacities of 180 MVA and 200 MVA respectively (at 115 kV). The forecast maximum loads on this circuit are shown in Table 7. As can be seen from this table the forecast 115 kV load will exceed the design capacity of this line during the summer of 1984.

Table 5
Algoma TS x Elliot Lake TS 115 kV Circuits
Forecast Maximum Winter Load (MVA)

(Non-coincident)

	Actual	Forecast					
	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
Blind River TS	4 4	4 5	4 7	4 8	5 0	5 2	5 4
Elliot Lake TS*	28 3	48 2	51 0	54 0	77 2	79 6	82 1
Rio Algom Mines	41 8	43 2	43 8	44 0	44.0	44 0	44 0
Denison Mines	39 1	54 0	63 2	68 3	71 3	73 9	75 6
Total	113 6	149 9	162 7	171 1	197 5	202 7	207 1

* Includes Stanleigh Mine to be re-opened in 1980. When in full operation in 1983 the load is expected to be 33 MVA.

Table 6
Algoma Area
Forecast Maximum Summer Load (MVA)

(Non-coincident)

	1980	1981	1982	1983	1984	1985
Rio Algom Mines	43	44	44	45	45	45
Denison Mines	49	57	62	64	64	64
Elliot Lake TS	36	38	39	61	63	64
Blind River TS	2	3	3	3	3	4
Massey DS	5	5	5	6	6	7
North Shore DS	4	5	5	10	10	10
Total	139	152	158	189	191	194
Espanola TS*	9	9	9	10	10	10
Eddy Forest*	22	22	22	22	22	22
Total	170	183	189	221	223	226

* Normally supplied from Algoma TS but can be transferred to R H Martindale TS in an emergency

Table 7
Algoma TS x Blind River TS 115 kV Circuit
Forecast Maximum Load (MVA)

	Actual (MVA)	Forecast (MVA)				
	1979	1980	1981	1982	1983	1984
Summer load	100	132	147	150	178	182
Winter load	114	150	163	171	198	203

Blind River TS x Elliot Lake TS

The two existing 115 kV circuits from Blind River TS to Elliot Lake TS are operated in parallel for a combined summer and winter design capacity of 207 and 258 MVA (at 115 kV) respectively. It is expected that loads will exceed the capability of both circuits in the late 1980's.

A.3 Alternatives Considered to Meet the Need

The alternatives for augmenting the electrical supply to the Elliot Lake area should provide adequate transmission and transformation capacities to supply the forecast loads. Studies of alternative plans to meet these requirements up to the year 1999 were carried out using a long term load forecast and approximate cost information. The alternatives covering 115 kV and 230 kV supply were as follows:

Alternative 1 (230 kV)

Provide a double circuit 230 kV supply to a new 230–44 kV transformer station in Elliot Lake and increase the reliability of the 115 kV system which will remain to supply the load in the Quirke Lake area, by carrying out the following work:

- Build a new 230–44 kV transformer station in the vicinity of Elliot Lake in 1983. The new station would supply the town of Elliot Lake and the mines in the vicinity of Elliot Lake.
- Build a new 230 kV double circuit line or two single circuit lines in 1983 from a junction adjacent to Algoma TS to the new 230–44 kV TS at Elliot Lake.
- Build a short 115 kV line, 0.4 km, between Algoma TS and Blind River TS, install 115 kV switching at Algoma TS and reconductor the existing 115 kV lines between Algoma TS and Elliot Lake TS to permit the entire remaining 115 kV load to be supplied over one line in an emergency. Reconnect the existing two 115 kV single circuit lines between Blind River TS and Elliot Lake TS to provide two separate 115 kV circuits.

Alternative 2 (115 kV)

Provide a double circuit 115 kV supply to an enlarged Elliot Lake TS by carrying out the following work:

- Build a new 115 kV single-circuit line between Algoma TS and Elliot Lake TS, approximately 25 km in length, install 115 kV switching at Algoma TS and reconductor the existing 115 kV lines between Algoma TS and Elliot Lake TS. The existing two 115 kV single circuit lines between Blind River TS and Elliot Lake TS remain connected in parallel operating as a single circuit.
- Increase the 230–115 kV transformation capacity at Algoma TS.

- Increase the 115–44 kV transformation capacity and install 115 kV and 44 kV switching at Elliot Lake TS.

Alternative 3 (115 kV)

Provide a double circuit 115 kV supply to an enlarged Elliot Lake TS by carrying out the following work:

- Build a short 115 kV single circuit line, 0.4 km in length, between Algoma TS, and Blind River TS, install 115 kV switching at Algoma TS and reconductor the existing 115 kV lines between Algoma TS and Elliot Lake TS. Reconnect the existing two 115 kV single circuit lines between Blind River TS and Elliot Lake TS to provide two separate 115 kV circuits.
- Increase the 230–115 kV transformation capacity at Algoma TS.
- Increase the 115–4 kV transformation capacity and install 115 kV and 44 kV switching at Elliot Lake TS.

Alternative 4 (115 kV)

Provide a three circuit 115 kV supply to an enlarged Elliot Lake TS by carrying out the following work:

- Build a new single-circuit 115 kV line between Algoma TS and Blind River TS, 0.4 km in length, build a new single-circuit 115 kV line between Algoma TS and Elliot Lake TS, approximately 25 km in length, install 115 kV switching at Algoma TS and reconductor the existing 115 kV lines between Algoma TS and Elliot Lake TS. Reconnect the existing two 115 kV lines between Blind River and Elliot Lake TS to provide two seperate 115 kV circuits.
- Increase the 230–115 kV transformation capacity at Algoma TS.
- Increase the 115–44 kV transformation capacity and install 115 kV and 44 kV switching at Elliot Lake TS.

A.4 Comparison of Alternatives

(i) Economic Comparison

The total costs of the alternatives were compared for the following two conditions:

- Milliken Mine is developed in 1987.
- Milliken Mine is not developed.

The cost comparison is shown in Table 8.

The effect of a 10 per cent reduction from the estimated load growth was also considered. Transmission line losses only were taken into account as the 10 per cent reduction in load did not significantly affect the timing of the facilities. As can be seen from Table 8, there was no effect on the ranking of the alternatives for a 10 per cent load reduction.

The cost comparison study shows that Alternative 1, 230 kV supply to a new 230–44 kV station near Elliot lake, has the lowest total cost.

(ii) Installed Transmission Line Capacity

The installed transmission line capacities were compared and it was shown that Alternative 1 (230 kV) provides approximately 600 MVA more capacity than Alternative 4 (115 kV) and approximately 760 MVA more capacity than Alternatives 2 and 3 (115 kV). In building a new 230 kV supply line, the minimum conductor size would be 795 kcmil, which has an approximate capacity of 380 MVA. The 230 kV plan would therefore provide 760 MVA of installed 230 kV transmission capacity.

By the end of the study period the transmission line facilities in Alternatives 2 and 3 would be loaded to capacity, while Alternatives 1 and 4 would provide a substantial margin for load increases.

A.5 Conclusion

Alternative 1 has the lowest total cost and provides

Table 8

1. Economic Comparison of Alternatives (present worth in 1977 of future costs in $000's)

		A. If Milliken Mine is developed in 1987:		B. If Milliken Mine is not developed:	
		Total Capital Cost	Total* Cost	Total Capital Cost	Total* Cost
Alternative	1	9,524	9,524	8,936	8,936
	2	9,298	11,921	8,251	10,042
	3	8,962	13,992	7,766	11,492
	4	10,418	13,041	9,390	11,161

2. Effect on Economic Comparison of Alternatives for 10 per cent Reduction from Forecast Load Growth

		A. If Milliken Mine is developed in 1987:	B. If Milliken Mine is not developed:
		Total Cost*	Total Cost*
Alternative	1	9,524	8,936
	2	11,423	9,702
	3	13,036	10,784
	4	12,543	10,825

* Total cost include the cost of additional transmission line losses for the 115 kV alternatives.

significantly more transmission line capacity than Alternative 2, which had the next lowest cost.

A.6 Preferred System Alternative

The preferred alternative from a technical and economic standpoint is Alternative 1.

A.7 Modification to Preferred System Alternative

The work now being recommended for approval is a modification of that described in Alternative 1.

It is now proposed to initially provide only one single circuit 230 kV supply to the TS in 1983. It is intended to provide the second 230 kV supply circuit to Elliot Lake in 1985 by building a new 230 kV single circuit line tap from the future Hanmer TS x Mississagi TS line. This line is planned to be routed either just north of Elliot Lake or south of Elliot Lake between the town and Algoma TS (see Appendix F).

Also, it is not proposed to build additional 115 kV transmission facilities between Algoma TS and Blind River TS or to reconductor the existing 115 kV lines between Elliot Lake TS and Algoma TS as described in Section A3. The cost of this work cannot be justified by the increased reliability it would have provided.

These changes to Alternative 1 do not affect the results of the economic comparison of the alternatives since the overall effect is to lower the cost of Alternative 1, making it even more attractive.

The decision not to proceed with the 115 kV transmission work will result in less installed transmission line capacity for Alternative 1 than that discussed in Section A4 (ii). However, even without the additional 115 kV transmission capacity, Alternative 1 will provide approximately 460 MVA more capacity than Alternative 4 and 620 MVA more than Alternatives 2 and 3.

The proposed plan, therefore, is now as follows:

- In 1983, build a new 230–44 kV station at Elliot Lake. The new station would supply the Town of Elliot Lake and the mines in the vicinity.
- In 1983 build a new 230 kV single circuit line from the 230 kV facilities near Algoma TS to the new 230–44 kV station at Elliot Lake, approximately 25 km in length.

Appendix B
Detailed Description of the Undertaking

B.1 Transmission Line

The proposed single circuit transmission line will be braced wood poles having an overall height of approximately 21 m. The majority of structures would be suspension type, that is, towers on straight sections of the line from which the conductors are suspended. At angles in the line, a slightly different structure may be used requiring guy wires for additional support.

The conductor to be installed would consist of aluminium strands wound around a steel core. The conductor would have an outside diameter of 3 to 4 centimetres and weigh approximately 3 kilograms per metre.

In order to shield the conductors from lightning, two Alumoweld (aluminium extruded around a steel core) skywires would be strung from the top of each pole. To reduce the likelihood of flashover from the pole to the conductor the electrical ground resistance at each pole must be minimized. This can be accomplished by installing a ground electrode at each pole base. If, as a result of soil conditions, the ground resistance at the poles is too high to be handled by local electrodes, additional grounding must be provided. The normal procedure in this case is the installation of two continuous "counterpoise" wires along the ROW one on each side of the structures. These wires would be buried at relatively shallow depths and connected to each pole. They would distribute the lightning charge among several poles and minimize the possibility of operational outages caused by lightning.

Once route approval has been obtained, the centre line would be established based on survey information, photography and local data. Using this information and the ground profile, detailed technical design ie., location, structure type, foundations, construction plan, etc. and ROW clearing proposals can commence.

With regard to foundations, in earth or rock the poles will be placed about three metres deep. In swamp or wet conditions more specific design may be necessary using cribs, guys, etc.

B.2 Right of Way (ROW)

The width of the ROW is a function of several design components including tower height, span length, conductor size, line security, and location. The proposed ROW between Algoma TS and new Elliot Lake TS would require an additional 31 m for a combined total of 84 m with the existing 115 kV lines.

In addition, there are requirements for minimum clearance between the conductors and wood poles to permit live line maintenance and prevent flashovers to the poles. National standards define minimum acceptable clearance for safe and continuous operation and the protection of adjacent property.

B.3 Transformer Station

The basic station equipment consists of 230 kV rigid conductor, 230 and 44 kV switching structures, transformers and a control building. The area required for these facilities is approximately 145 m x 155 m which would allow for two future transformers and additional 230 kV switching. The surface would be crushed stone and the area surrounded by a 2 m high fence.

The orientation of the station is dependent upon the physical limitations of the site, ingress from the 230 kV transmission line, the 44 kV feeder egress and road access.

The site development costs for each site alternative concentrated on the grading, access road and foundation requirements, all other costs being common.

Sound enclosures may be fitted to the transformers to ensure that the noise level of the station will not rise above the ambient noise level of the area.

The two main transformers would be protected by a concrete curb within which an impervious woven polyethelene liner is placed and topped with crushed stone. Each catch pit would be designed to hold 50 per cent of the oil capacity of each transformer and the pits would be linked together. The system is therefore designed, should a leak occur, to contain the oil capacity of one transformer, thus seriously curtailing oil contamination within the station. None of the oil used within the station contains polychlorinated biphenyl (PCB) compounds.

The station would not be manned but frequent visits would be necessary to monitor the instrumentation within the control building. It is also possible that use of the area, not utilized initially, may be made for the temporary storage of transmission line material.

Minimal landscaping would be required and any that might be carried out would be integrated with the natural vegetation.

B.4 Construction

Construction would be carried out by Ontario Hydro construction staff or by contract forces. Construction practices would comply with 'Construction and Site Restoration Guidelines' as filed with the Ministry of the Environment. The major construction activities would be:

Transmission Line

- right-of-way clearing
- access routes
- material handling
- foundations
- structure erection
- conductor stringing
- counterpoise (grounding)
- cleanup and restoration

Station

- site clearing and grading
- access road
- foundations
- transformer and equipment delivery

- control building
- structure erection and bus work
- switch gear installation
- testing and commissioning

After Ministry of the Environment approval, Order-in-Council, survey and structure location, Hydro and other Ministry staff can travel the ROW to identify specific areas of concern and proposed mitigative measures prior to the start of construction in that area.

B.5 Operation

The operation of the proposed transmission facilities would produce electric and magnetic fields in the space surrounding the equipment. Through careful design, all potential effects would be either eliminated or controlled. The 'Operation of the Transmission Line - Electrical Effects on the Environment' will be filed with the Ministry of Environment. A protocol associated with noise levels is to be referenced in the Construction and Site Restoration Guidelines.

B.6 Maintenance

Routine operation of the facilities would require occasional maintenance within the station and on the line ROW and hardware.

(a) Right of Way Maintenance

Transmission ROW maintenance includes the control of vegetation (brush and trees) which is incompatible with overhead lines. Foot patrols are carried out at least once every two years on high voltage ROWs to identify potentially dangerous tree conditions. The pruning and removal work is carried out as required by forestry tradesmen.

Incompatible, fast growing woody vegetation (brush) is controlled by cutting, the selective use of government approved herbicides, biological control methods or combinations of these techniques. Herbicide application is supervised by licensed personnel and is done in accordance with federal and provincial legislation.

Mitigation and management practices are undertaken at ecologically sensitive areas. This may include the planting of ground covers, such as grasses, to prevent or minimize erosion, and the stabilization of the hydrologic cycles in wetlands.

(b) Transmission Line Maintenance

Normal line maintenance includes annual foot patrol inspections and helicopter surveillance approximately six times per year. Repairs required as a result of routine inspections can usually be scheduled to minimize the impacts on the ROW and an adjacent property owners. Emergency repairs, which are generally caused by severe weather conditions, must, in most cases, be carried out without delay. This often means that heavy equipment and material must be brought into the area immediately.

In the planning and execution of all maintenance activities, a major consideration is the limiting of disruption to the environment and to property owners. The use of helicopters and all-terrain vehicles greatly reduces the impact of maintenance activities. In cases where damage to the environment or adjacent property has been unavoidable, the necessary restoration work is carried out by Hydro, or the owner is compensated for the cost of restoring all affected property, as nearly as possible, to its original state.

(c) Transformer Station Maintenance

In general, the Ontario Hydro property adjacent to the station is maintained to a standard that is compatible with the surrounding community.

Damage caused by severe weather or vandalism is repaired. Access roads are maintained, including snow removal as necessary. Fencing is maintained to protect the public or land from hazards that result from unauthorized access. Debris is cleared up regularly.

Maintenance to the electrical equipment consists of:

1. routine work carried out at times when the electrical load is low, allowing a portion of the station to be taken out of service.
2. emergency repairs to replace equipment which has failed. This applies more to smaller equipment since frequency of transformer and circuit breaker failure is low.

B.7 Decommissioning

Experience with similar types of transmission facilities indicates that both the line and station could be in operation for a minimum of 50 years. The station is designed to serve the Town of Elliot Lake and the mining companies and as such, plans for decommissioning would depend largely on the town and mining activities.

If it would be advantageous to decommission in the future, this could take the form of either upgrading or abandonment of the facilities.

If the station were to be upgraded, this would require either extending the station or construction of a new one, where possible, adjacent to it. The line could be upgraded by replacing the existing conductor by one with a larger current carrying capacity. To ensure adequate clearances the work could involve the replacement or addition of certain structures. The construction activities and associated environmental impacts would be very similar to those covered by this document.

If the facilities were abandoned, construction activities would be limited to the removal of the line and station. The station equipment and buildings would be dismantled and removed. Access would be required to the line structure locations for their removal. All foundations would be covered and affected areas restored in accordance with Ontario Hydro 'Construction and Site Restoration Guidelines'. Hydro would consider deposition of the site and ROW to adjacent owners if surplus to future requirements.

APPENDIX C
Socio-Economic Profile of the Study Area

The boundaries of the study area are shown in Figure 1. Except for portions of the Town of Elliot Lake, (population 14,230, see Table 9), there are no other human settlements in the immediate study area. Other human settlements within commuting distance which may experience potential effects from this project include Blind River (population 3,142) and in the Township of the North Shore, Serpent River (population 7), Spragge (population 97), Spanish (population 1,082) and Algoma Mills (population 89).[1] The towns of Elliot Lake and Blind River will likely feel any project-related impacts.

Table 9
Town of Elliot Lake
Assessed Population Changes

Year	Population
1960	24,887
1961	15,690
1966	6,664
1971	8,796
1976	8,779
1977	10,729
1978[1]	12,893
1979[2]	14,230

1. Sources:
   1 Official Plan Amendment No. 4 Page 48 Town of Elliot Lake May 1977
   2 Municipal Directory, Ministry of Intergovernmental Affairs, Ontario, Queen's Printer 1979

Note

During the last four years, growth has been between 10 per cent and 20 per cent per year. As of October, 1979, the town's assessed population was 14,230. It was felt by Town officials that the actual population is in fact much higher. People renting basement apartment accommodation often are not counted in assessment figures. Mine employment is expected to increase an average of 9½ per cent annually (Source: Marshall, Macklin, Mohaghan, Elliot Lake Municipal Housing Statement, June 1980).

C.1 History of Area

European explorers first arrived in the area in the early 1600s and quickly established a fur trade with the local Indian tribes. The fur trade prospered until about 1840 when the availability of furs became seriously depleted from over-exploitation. At this point, a slowly developing timber industry centred in Blind River and based on white and red pine boomed and continued up until the 1930s when the supply of pine began to dwindle. The development of pulpwood operations as well as hardwood for veneer became the economic substitute for the declining pine harvest. The final collapse of the pine operations occurred with the closing of the McFadden Mill in 1969 in Blind River.

While mining dates back to the 1840s, it did not become a key resource industry until the discovery of uranium in 1948. Intense mining activity resulted in the creation of the Town of Elliot Lake which by June, 1959 had a population of 30,000. The subsequent loss of the American uranium market resulted in mine closings and reduced the Elliot Lake population to 6,000 by 1965.

With new secured contracts, the mines are again expanding.

C.2 Economic Base

Natural resource development and tourism form the economic base of the study area.

The uranium mines at Elliot Lake are the largest employers in the area with two mining companies employing the major portion of the labour force. The two companies, Rio Algom Limited and Denison Mines Limited expect to increase their levels of employment by 48 per cent over the next five years (from 4,650 in 1979 to 6,881 in 1984). After this rapid growth, the rate of growth will slow significantly[2]. While these mines are expected to continue to provide employment, the Environmental Assessment Board Report into the Expansion of The Uranium Mines in the Elliot Lake Area (May 1979) expressed concern with the mine employment forecasts. The Board observed that because the forecasts are frequently revised they should be treated with caution when being used to predict future growth and accompanying services.

Within the study area, some forested areas have value for timber production although much of it has been cut-over (for further information see Appendix D). While some timber is milled in the Blind River and Elliot Lake areas, forest industries are, to a large extent, based outside the study area.[3]

The town of Blind River provides services for the smaller North Shore communities. As well, Blind River is a minor tourist centre. In addition, the construction and operation of a uranium hexafluoride refinery in Blind River will give the town an expanded industrial and economic base and may increase its capabilities as a service centre for communities along the North Shore[4].

Other area or local industries include trapping, commercial fishing (Blind River, Algoma Mills, Spragge) and tourism.

A strong agri-community is not present in the Blind River area [5] although there are pockets of Class 4 and 5 land around Blind River and east and south of Spragge that support beef and dairy cattle for the local market[6].

C.3 Employment

The current boom in Elliot Lake will require approximately 278 new mining employees in 1980 and 605 new mining employees in 1981.[7]

With the expansion of the mines in the Elliot Lake area, general employment opportunities have increased greatly. This secondary employment is a result of increased demands for retail stores and services. In September, 1979, the unemployment rate declined to 3.5 per cent, from 5.5 percent in 1976. Approximately 30 per cent of the locally unemployed are women in the 25–34 years age category[8]. The new Algocen Centre, presently under construction, is expected to employ some 400 persons. Approximately 80 per cent of the stores are expected to be new outlets which should provide job opportunities to further decrease the unemployment rate.

Because of the expanding mines and service industry, there continues to be a shortage in such trades as miners, woodsmen, skilled tradesmen and professionals. A 'ripple' effect of increased employment opportunities is also felt in Blind River, an area particularly hard hit by the closing of the Champlain Forest Products operation in the late 1960's[10]. New job opportunities will be created in Blind River with the opening of the uranium hexafluoride refinery.

C.4 Transportation

All the human settlements of concern are connected by provincial highways. Highway 17, the southern route of the Trans-Canada Highway, runs in an east-west direction, paralleling the lakeshore and the railway. It is a high-standard, two-lane highway, with passing lanes where required.

Highway 108 runs from Highway 17 at Serpent River to Elliot Lake and the mines just north of the town. It is a collecter highway with numerous curves and hills. The highway has been recently upgraded and now includes passing lanes. However, local reports indicate that heavy traffic may periodically be present on this highway.

Greyhound Bus Lines provides daily passenger service to the towns along Highway 17, making connections in Sudbury and Sault Ste. Marie. A.J. Bus Lines provide daily service from Elliot Lake to the Greyhound depot on Highway 17 and return. Also, A.J. Bus Lines provides charter service to the district. This bus line is based in the Town of Blind River.

C.5 Housing

The rapid expansion of the mines around Elliot Lake has resulted in a shortage of housing in the community, especially affordable rental apartment and townhouse accommodation. The town is aware of these shortages and with the development of Townsite # 2 is looking to increase the supply of some housing types.

Temporary accommodation (motels/hotels) is available in Elliot Lake, Serpent River, Spragge and Blind River (see Table 10 for a list of hotels/motels by municipality).[11]

Elliot Lake has a total of five year-round motels with a combined total of 275 rooms. These establishments, unlike those in the North Shore area communities, are not as subject to seasonal fluctuations. They are either fully booked, or almost so, year-round with miners, salesmen, professionals, etc. One of the motels has been booked by one of the companies for accommodation for its mine workers. However, the opening of a new hotel in the spring of 1980 has functioned to provide increased temporary accommodation.

Table 10
Temporary Accommodation – Elliot Lake and Vicinity[1]

Location	Hotel	Rooms
Spragge	Marcel Motel	8
Serpent River	Kennebec Motel	3
Blind River	North Shore Motel	25
	Old Mill Motel	38
	Star Motor Motel	16
	Sajda Motel	15
	McCivers Mississaugi Motel	10
Elliot Lake[2]	Algonden Hotel	35
	Inn on the Lake	28
	Nordic Inn	59
	Oaks Motel	66
	Algo Inn	87

1 Telephone Survey

2 R.T. Haworth, Ministry of Industry and Tourism, Sudbury, Ontario, July 1980

Serpent River has one year-round motel which often houses workers from the Elliot Lake mines. The five year-round motels in Blind River have a combined total of 104 rooms. Spragge has one motel with eight rooms. These motels are nearly full or full during the summer months only. Then, once the tourist season finishes, they have a low occupancy rate.

C.6 Fire Protection

The Elliot Lake Fire Department and the Blind River District Office of the Ministry of Natural Resources are responsible for fire protection in the study area. The town pays the Ministry of Natural Resources for forest fire protection on certain lands within the municipal town limits (Type C agreement).

At present the municipal fire service would appear to be adequate for the present population in the town site. The town has a composite fire department, 6 full time men and 20 volunteers. The service provided is on par with other comparable municipalities in Ontario.

The MNR services are not strained nor are they likely to be so in the near future. If available, MNR staff and equipment can be imported quickly from surrounding districts in the event of a major bush fire. At this time, the level of MNR service is expected to be adequate for the population forecasts being given for Elliot Lake.[12]

Table 11 indicates the number of bush fires which have occurred in the past in the Elliot Lake vicinity.

C.7 Recreation

The recreational activities with the widest community participation in Elliot Lake as reported in the Goldfarb Social Impact Study[13] are swimming, fishing, hunting

Table 11
Bush Fires in Elliot Lake Vicinity
(Blind River District)

Year	Number of Fires	Year	Number of Fires
1954	7a	1966	5
1955	9a	1967	2
1956	6	1968	-
1957	-	1969	5
1958	9b	1970	3
1959	14b	1971	2
1960	1	1972	-
1961	2	1973	1
1962	5	1974	3
1963	13a	1975	17d
1964	3c	1976	13d
1965	2	1977 (to Aug)	9e

a very dry year
b increase probably due to construction boom
c very wet year (few fires)
d increase probably due to dry year rather than increase in town size
e increase probably due to town growth although spring was very dry

Source: Ministry of Natural Resources
Mr. J.R. Davis, Chief of Fire Fighting
Ontario Ministry of Natural Resources
August 1977, from J.F. MacLaren Ltd., Environmental Assessment of the Proposed Elliot Lake Mines Expansion, Volume 3, Community Assessment, March 1978

and camping. The Goldfarb study also indicated that people felt their participation is restricted in tennis, ice skating and hockey.

Recreation facilities in Blind River include an indoor arena, beaches, boating, curling rink, town parks and a sports complex. One area of concern relates to the provision of playground and public open space.[14] In the short term, there appears to be a need for more 'tot-lot' young children's areas. Other than this, the provision of other types of recreation areas appear to be adequate for the existing population.

C.8 Social Aspects

The Goldfarb Social Impact Report indicates the people of Elliot Lake see a need for more development in the Elliot Lake area, especially in the area of accommodation and shopping. There is a feeling there are not enough jobs for women and young people. People are also concerned with the need to develop social outlets to combat alcohol, drug abuse and juvenile delinquency.

Within the town of Blind River there is a positive attitude towards local industrial development. Increased development is seen as a means of reversing the current out-migration of the younger age groups and the resulting gradual increase in the average age of the population. Local development represents an improvement over existing conditions and a social and economic revitalization of the town itself.[15]

C.9 Regional Planning

The size and level of economic activity of Elliot Lake and environs is closely related to fluctuations in the uranium industry. As a result of new long term contracts, the town is experiencing a period of rapid growth. To accommodate this growth, the municipality has embarked on a comprehensive development program.[16] As this program is implemented and more jobs are opened up for women, many problems associated with the rapid growth now being experienced are expected to diminish. Within the Official Plan for Elliot Lake, subdivision and part lot control bylaws exist to maintain control over land transactions, so the mechanisms exist to control the land use implications of growth.

Towns within the Township of the North Shore are expected to continue to be dormitory towns for Elliot Lake.[17] The Draft Official Plan for the Blind River and Suburban Planning Area recognizes the town's commuter role and its growth and development strategies and scenarios are based accordingly. The actual number of commuters though, will depend to a large extent on the availability of housing in the town of Elliot Lake and effects of the uranium hexafluoride refinery. To control any further growth, the Draft Official Plan proposes to restrict development in the suburban areas and instead, encourage the infilling of existing developed areas.

Footnotes

1. James F. MacLaren Ltd., Environmental Assessment of the Proposed Elliot Lake Uranium Mines Expansion, Volume 3, Community Assessment, March 1978.
2. Marshall, Macklin, Mohaghan, Elliot Lake, Municipal Housing Statement, June 1980.
3. Ministry of Natural Resources, Background Information, Blind River District, Northeastern Region, December 1977.
4. Socio-Economic and Community Effects, by the Town of Blind River and Proctor and Redfern Group, December 1978.
5. Provincial Overview of Generation Siting, The Agricultural Report, Ontario Hydro Report No. 79396, Dec. 1979.
6. Ministry of Natural Resources, op. cit.
7. Marshall, Macklin, Monaghan, op. cit., Figure 3.1.
8. Conversation with Canada Employment and Immigration, Sept. 25/79 as reported in Marshall, Macklin, Monaghan, op cit p. 8.
9. Conversation with Algocen Realty, December 1979 as reported in Marshall, Macklin, Monaghan, op cit p. 8.
10. Blind River Industrial Committee, 1977, Community Profile of Blind River.
11. Telephone Survey of Area Motels, November 1979, Discussion with B. Haworth, Ministry of Industry and Tourism, July 21, 1980.
12. Discussions with Mr. J. Huntington, Fire Services Advisor, Ministry of Natural Resources, Blind River, December 1979.
13. Social Impact Study, Elliot Lake, Goldfarb Consultants Limited, September 1977.
14. Draft Official Plan for the Corporation of the Town of Blind River and Suburban Planning Area, 1979.
15. Proctor and Redfern Group, Socio-Economic and Community Effects, Town of Blind River, December 1978.
16. Marshall Macklin Monaghan Ltd., Amendment No. 4 to the Official Plan for the Elliot Lake Planning Area, August 1977.
17. J.F. MacLaren, op. cit.

APPENDIX D
Environmental Factors

LAND USE

(Refer to Figure 9)

Description

Both existing and proposed land uses were inventoried. The existing land use inventory included residential, industrial and commercial areas and a radio communication tower. The proposed land use inventory was based on the Elliot Lake official plan and included residential and future development, a new town centre and a sewage treatment facility.

Analysis

Review of the inventoried land used indicates that the most important existing land use is a residential subdivision, referred to as subdivision 3C, and a small trailer park, both located near the existing transmission line. Several small light industrial and commercial businesses are situated along Highway 108. The only other significant existing land use is the local radio station communication tower located between Highway 108 and Porridge Lake.

Proposed land use is very significant, as the study area encompasses the proposed new town development designated in the Elliot Lake official plan. This area is bounded by Highway 108 and Nordic and Porridge Lakes and is scheduled to be developed over the next 10 to 15 years in order to accommodate the influx of population expected with the expansion of the mining operations. Also included in this development are proposals for a new town centre, a sewage treatment facility and another designation referred to as future development.

Data Sources

- Elliot Lake Official Plan: Marshall, Macklin, Monaghan Planning Consultants
- Aerial photographs, black and white photos, 1:25,000
- 1:50,000 topographic series maps
- Field inspection by automobile

VISUAL EFFECTS

(Refer to Figure 10)

Description

Visual impact can be defined as "a perceived physical change to the character of the landscape which results in a negative human response." Therefore, the visual factor identifies within the landscape the degrees of change that will occur because of the construction of Hydro's facilities. In order to identify these degrees of change, the existing line was inventoried and analysed to serve as an example of the kinds of visual impacts that would occur as a result of constructing new Hydro facilities through the same area.

Analysis

The landscape between Algoma TS and Elliot Lake is a naturally forested area with some long, narrow lakes and a series of small, complex hills and rock outcroppings. Generally, the relative relief within this area is less than 10 m, except at Esten Lake where the relief increases to 30–40 m. There are also several large well-defined hills between Esten Lake and the Elliot Lake town site.

The existing transmission lines, as they leave Algoma TS, climb a 30 m slope immediately north of Highway 17. The lines are visible from the highway and there is some minor skylining. Proceeding north, the lines have minimal impact on the landscape except at Turtle Lake where they cross at the west end of the lake, altering the character of that part of the lake. At the Marshland River, the lines cut diagonally across an oxbow in the river which also alters the character of the river. Between Esten Lake and the Town of Elliot Lake, the lines cross the crests of several large hills, which makes the lines visible from the town.

Data Sources

- Aerial photographs, black and white, 1:25,000
- Field inspection by automobile
- 1:50,000 topographic series maps

RECREATION

(Refer to Figure 10)

Description

Ontario Hydro facilities impact on recreational lands in two ways: physical limitations; and the quality of experience normally associated with recreational activities. In an attempt to avoid creating this type of impact, the study area was inventoried for both existing and proposed recreational activities.

Analysis

Two existing and one proposed recreational area were identified. The Marshland River Canoe Route would be affected by an additional transmission line since it crosses diagonally across the entire study area. A ski area is situated east of Highway 108 near Horne Lake. The proposed recreational area, Sheriff Creek Park, is presently being developed by Rio Algom Ltd. Located off Milliken Road, it proposes to have a cross-section of recreational activities.

Data Sources

- Elliot Lake Official Plan
- Master Plan for Sheriff Creek Park, Rio Algom Ltd.
- MNR canoe pamphlet

AGGREGATE RESOURCES

(Refer to Figure 11)

Description

The aggregate inventory included information on areas with active or inactive quarry permits.

Analysis

The most significant permit areas are located east of

the transmission line, near Nordic Lake on property owned by the Town of Elliot Lake; and near Esten Lake, which is Crown Land. The only other area identified is west of the transmission line near Esten Lake.

Data Sources

- Aerial photographs, black and white, 1:25,000
- 1:50,000 topographic series maps
- Mining claims maps, 1977, Ministry of Natural Resources
- (1 inch = 40 chains)

ENVIRONMENTALLY SENSITIVE AREAS

(Refer to Figure 12)

Description

The purpose of this factor was to determine the presence, if any, of areas of environmental sensitivity such as aquatic or terrestrial communities and wildlife or waterfowl habitat.

Analysis

In general, the study area did not include any major environmentally sensitive areas. Esten and Turtle lakes were identified as having significant aquatic communities. An area near Marshland Lake, adjacent to the transmission line, was identified as having significant waterfowl habitat (Class 3, Canada Land Inventory).

Data Sources

- Aerial photographs, black and white, 1978
- Scale 1:25,000
- Ministry of Natural Resources, Blind River District
- Personal communications, 1978

DRAINAGE PATTERNS

(Refer to Figure 13)

Description

The drainage patterns in the study area were inventoried by identifying the location and directional flow of all rivers and lakes within the study area.

Analysis

There are numerous lakes dotting the entire study area with the most significant of these being Long Lake, Turtle Lake, Marshland Lake, Esten Lake, Porridge Lake and Horne Lake. The most notable river bodies are Marcellus Creek and the Marshland River. Flow directions vary, since the area is not part of a significant watershed.

Data Sources

- Aerial photographs, black and white, 1:25,000, 1978
- 1:50,000 topographic series maps

FOREST VEGETATION

(Refer to Figure 14)

Description

Forest vegetation cover in the study area is mainly hardwood forest and mixed woods with some patches of conifers. Poplar, birch, maple, white pine, jack pine and spruce are the predominant species. Although over 60 per cent of the forest stands are mature (physiologically), only a limited number of these stands have attained merchantable size. This is especially prominent in the areas south of Marshland Lake which are characterized by spreadings of outcrop. There has been some timber harvests in the last 10 years, particularly in the area north of Esten Lake. This area has been regenerated.

Analysis of Forests

Forest species associations and site classes were two criteria used for defining various levels of constraint of forest communities. Coniferous species, although limited in quantity, were considered most desirable in producing usable woods. FRI site classes were used to estimate relative timber use capabilities. Although the maturity of trees is important in terms of wood utilization, age was not given consideration in the evaluation due to the small average size of mature trees. Therefore, based on species and site quality, three types of forest constraint were defined for the study area:

1. Coniferous Forests on FRI Site Class 1 and 2

Most of this forest type is located west of Marshland Lake with the existing 115 kV bisecting it. The area is small, about 11 percent of the whole forested area. The area has been licenced and will probably be harvested in the near future. White pine and jack pine are the two dominant species with some scattered birch and poplar.

2. Mixedwood and Hardwood Forests on FRI Site Class 1 and 2

These areas are located mostly in the northern half of the study area - east of Elliot Lake, north of Esten Lake and south of Marshland Lake. They occupy about 30 percent of the forested land in which 70 per cent is hardwood species. Poplar, birch and maple, mixed with jack pine and white pine, are very common. Yellow birch, beech and oak can also be found.

3. Coniferous, Hardwood and Mixedwood Forests on FRI Site Classes 3 and 4

The rest of the forest area, about 60 per cent, is low to very low capability land for timber production. These lands are located throughout the study area but are concentrated in the central and southern parts. Poplar and birch compose the major forest cover but due to the low capability, many of the trees remain shrub-types. Therefore, wood quality is very poor.

Table 12
Forest Associations and Forest Resources Inventory (FRI) Site Classes

Forest Associations		Site Class 1	2	3	4	Total
Hardwood	(ha)	149	537	598	396	1680
	(%)	4	14	15	10	43
Conifers	(ha)	35	372	32	292	731
	(%)	1	10	1	8	20
Mixedwood	(ha)	113	208	392	752	1465
	(%)	3	5	10	19	37
Total	(ha)	287	1117	1022	1340	3876
	(%)	8	29	26	37	100

Analysis of Wetlands

Wetlands are scattered throughout the study area and are generally small in size, i.e. 2 to 20 hectares. Generally, these wetlands can be categorized into two types:

1. Open Wetland

All marshes and fens are included in the category. Grass, sedge and reed are the main plant covers with occasional scrub type black spruce and tamarack.

2. Swamp

Other areas are covered by tamarack, black spruce and white cedar, with the water table remaining high for most of the year. These areas are sensitive to any disturbance.

Data Sources

Ministry of Natural Resources, Surveys and Mapping Branch Forest Resources Inventory (FRI) maps, 1964 (scale 1:63,360)

The 1964 FRI maps were used as a base data source, but were found to be inadequate due to their dated time of compilation. Using 1978 aerial photographs, these maps were generalized in terms of boundaries, species composition and age. Boundaries were modified by checking the aerial photos and making field checks. Species composition was altered to show only the dominant species while ages were grouped into mature and immature stands. All the muskegs, open muskeg, bogs, stagnant stands and other wetlands were grouped into swamps and open wetlands. However, the FRI site classes were not changed.

- Aerial photographs, black and white, 1978
- Scale 1:25,000
- Field inspection by helicopter, 1978

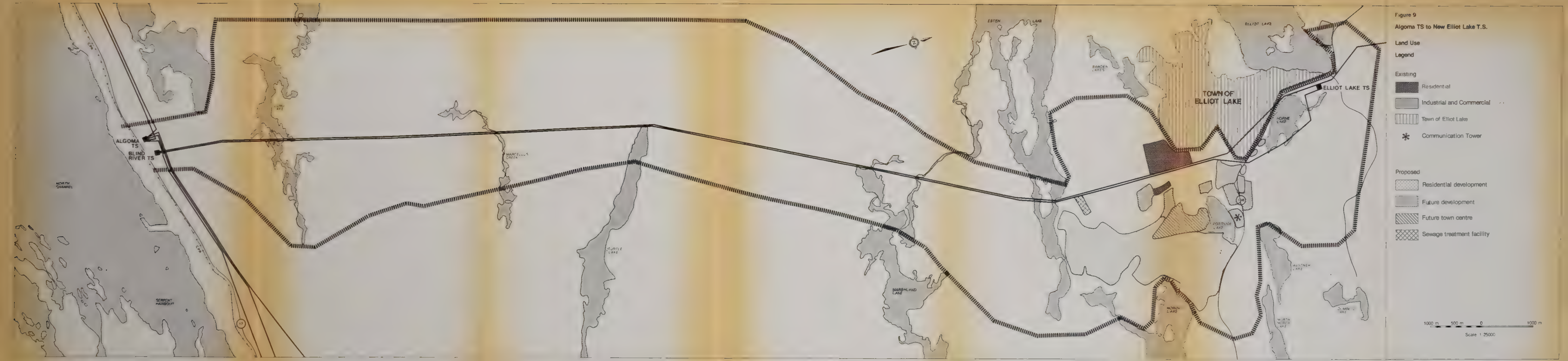
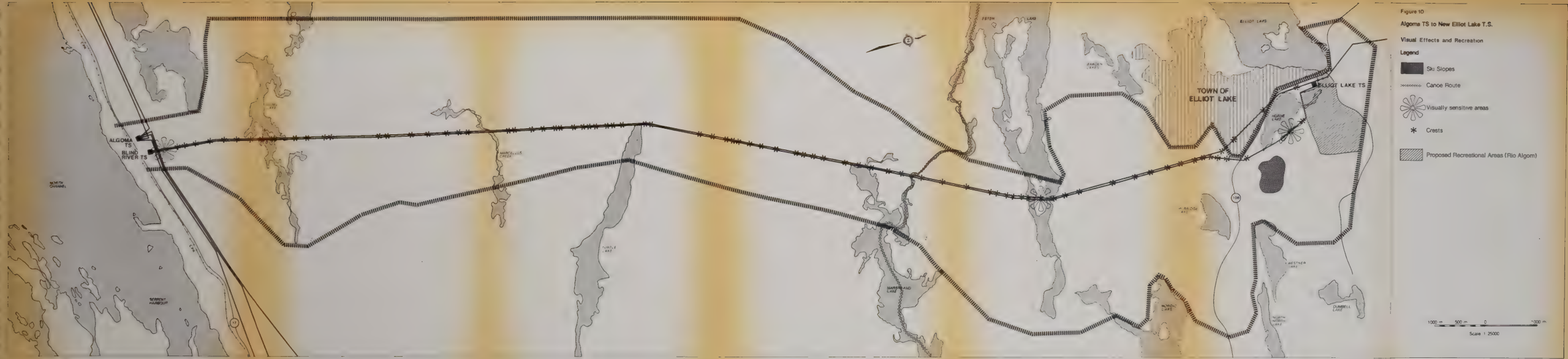


Figure 9
Algoma TS to New Elliot Lake T.S.


ALGOMA TS
BLIND RIVER TS
TOWN OF ELLIOT LAKE
ELLIOT LAKE TS
Figure 10
Algoma TS to New Elliot Lake T.S.
Visual Effects and Recreation
Legend
Ski Slopes
Canoe Route
Visually sensitive areas
Crests
Proposed Recreational Areas (Rio Algom)
1000 m 500 m 0 1000 m
Scale 1: 25000

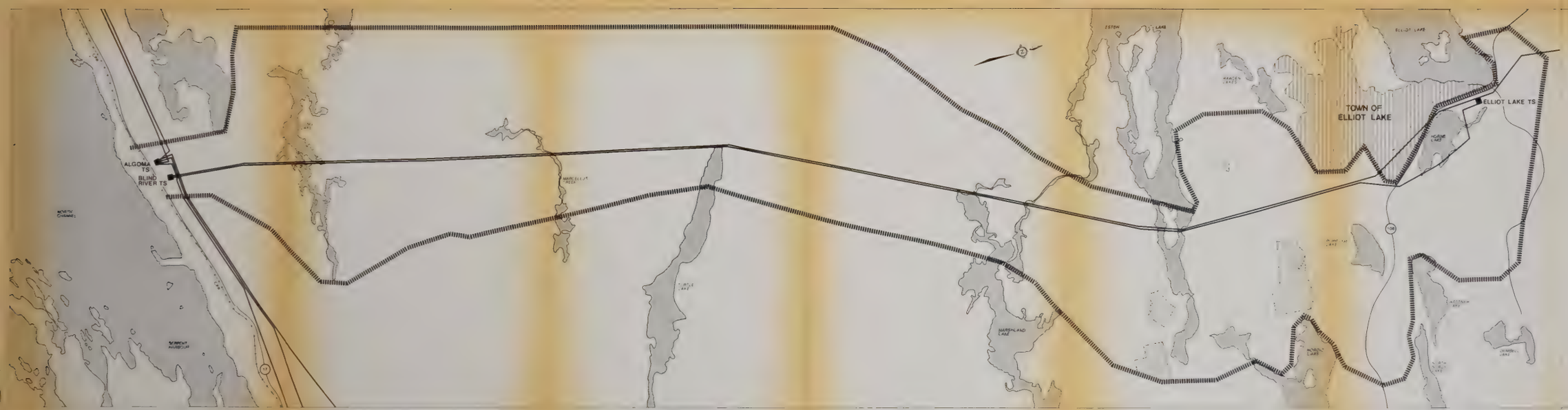


Figure 11

Algoma TS to New Elliot Lake T.S.

Aggregate Resouces

Legend

Pit and Quarry Permit Areas

Scale 1:250K

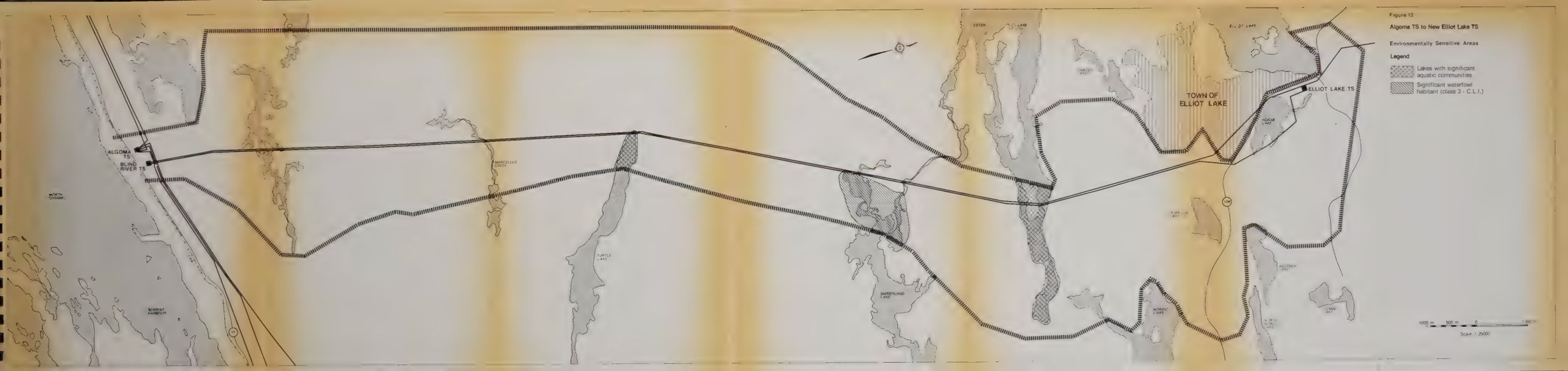


Figure 12

Algoma TS to New Elliot Lake TS

Environmentally Sensitive Areas

Legend

- Lakes with significant aquatic communities
- Significant waterfowl habitant (class 3 - C.L.I.)

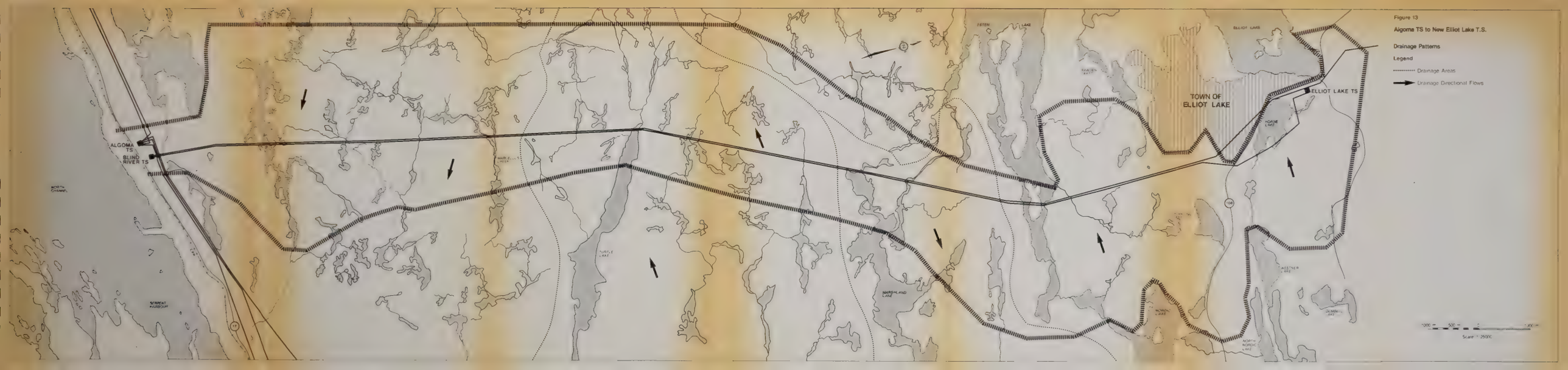


Figure 13

Algoma TS to New Elliot Lake T.S.

Drainage Patterns

Legend

Drainage Areas

Drainage Directional Flows

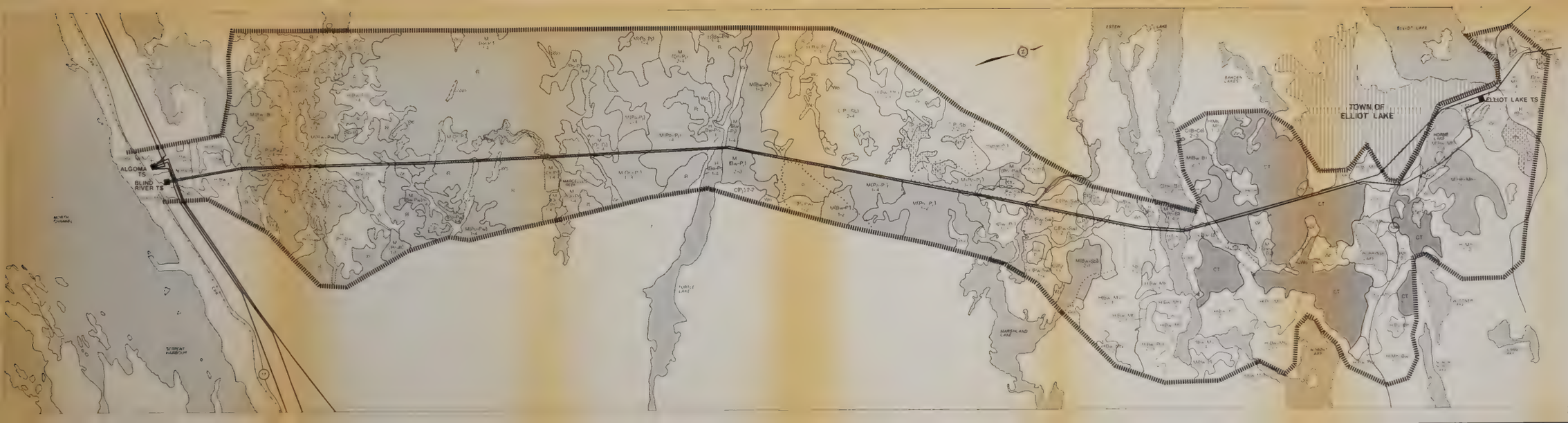


Figure 14

Algoma TS to New Elliot Lake T.S.

Forest Vegetation

Legend

H - Hardwoods Forest - Mh, Bw, Ms, Po, Or, Ab

C - Coniferous Forest - Pr, Pw, Pj, Sb, Sw, B

M - Mixed woods Forest

CT - Cutover, new growth

R - Scattered barrens or bare rock

Wo - Open wetland

Ws - Swamp

Allocated Timber Licences

Example: Po - Pj
2-4*

*First digit indicates maturity
1 - mature
2 - immature

Second digit indicates FRI
1 - site class 1
2 - site class 2
3 - site class 3
4 - site class 4

1000 — 500 — 0 — 1000 m

Scale 1:25000

APPENDIX E
Public Involvement

Copies of status reports, minutes of meetings correspondence and a summary of the public involvement program evaluation are available upon request.

Algoma TS x Elliot Lake TS Study
Citizens' Liaison Committee

Town of Elliot Lake	Mr. Gus Sicoli
Elliot Lake Planning Board	Mr. Ernie Massicotte
Township of the North Shore	Mr. Harold Weatherley (Reeve) (Deceased)
Marshall, Macklin, Monaghan Ltd. Consulting Engineers	Mr. Nick Walker (Project Manager, Elliot Lake new townsite project)
Ministry of Natural Resources	Mr. Evan Simpson (District Planner)
Ministry of Northern Affairs	Mr. Peter Merrit (Northern Affairs Officer)
Denison Mines Ltd.	Mr. Bill Young (Electrical Engineer)
Rio Algom Ltd.	Mr. Tibor Beck (Quirke Mine Plant Superintendent)
United Steelworkers of America	Mr. Ruben Juuti
Elliot Lake Centre	Mr. Bill Kidd (Director)
Elliot Lake Rod and Gun Club	Mr. Eric Wismer (President)
Town of Elliot Lake	Mr. Bob Manuel (Community Relations Officer)
Lauzon Aviation Co. Ltd.	Mr. Reino Makela

Provincial Ministry Representatives

Ministry	Representative	Address
Industry and Tourism	J. Fabius	120 Huron Street Sault Ste Marie
Provincial Secretariat for Resources Development	K. Richards	Room 1633 Whitney Block Queen's Park
Northern Affairs	P. Merrit	10 Brunswick Walk Elliot Lake
Natural Resources	E. Simpson	62 Queen Street Blind River
Culture and Recreation	M. Fram	77 Bloor Street West Toronto
Culture and Recreation	M. Hibbert	390 Bay Street Sault Ste Marie
Culture and Recreation	T. Conway	875 Queen Street Sault Ste Marie
Agriculture and Food	A. Mitchell	1496 Wellington Street Sault Ste Marie
Transportation and Communications	C. Meyers	1201 Wilson Avenue Downsview
Treasury and Economics	P. Vaughan	Frost Building North Queen's Park
Housing	E. Hitchman	56 Wellesley Street West Toronto
Environment	C. Pautler	135 St. Clair Avenue West Toronto
Community and Social Services	J. MacDonald	123 March Street Sault Ste Marie
Energy	A. Frame	12th Floor 56 Wellesley Street West Toronto

Outline of Public Involvement Activities

I. Study Introduction

September, 1978

- A community profile was developed as a basis for the public improvement program.
- An information kiosk was located in the municipal office to provide an ongoing information feedback channel for the project's duration.

October, 1978

- Letters introducing the study were sent to the local MP, MPP, elected and appointed municipal officials, provincial Ministry representatives and to persons listed on a local contact list.
- An introductory press release was issued to the local media to inform the public of the study.

November, 1978

- A presentation was made to the Elliot Lake Planning Board to outline the study and identify preliminary planning or development concerns.

November/December 1978

- Field contacts were made to identify potential citizens' committee members.

II. Identification of Alternative Sites and Routes

February, 1979

- The first citizens' liaison committee meeting was held to outline the study and discuss the role of the committee (*NB the local media was notified of each citizens' committee meeting in advance and all meetings were open to the public.)

March, 1979

- Second citizens committee meeting to review and comment on the study data.

April, 1979

- Third citizens' committee meeting to identify possible site and route alternatives for further consideration.

June, 1979

- Status Report No. 1 outlining the study's purpose, schedule and study area was mailed to local officials to the study mailing list and to the media with an invitation to attend the first public information centre. Copies were made available to the local public at the Hydro information kiosk and the local area Hydro office.

June 18, 19, 1979

- Public Information Centre No. 1 – public review of alternative sites and routes.

III. Evaluation of Alternative Sites and Routes

September, 1979

- Fourth citizens' committee meeting to review feedback from the first information centre and to discuss the evaluations of each of the alternate sites and routes

October, 1979

- Status Report No. 2 – identifying the alternate sites and routes under review was distributed to the study contact list, with an invitation to comment on the study evaluations at a second information centre . Copies made available to the local public at the Hydro information kiosk and local Hydro office.

October 22, 23, 1979

- Public Information Centre No. 2 – an outline of the economic, environmental, social and technical considerations for each of the five sites and two route alternatives was presented for public review.

IV. Identification of Preferred Site and Route Alternatives

November, 1979

- Fifth citizens' committee meeting to review the feedback from the information centre, discuss the study evaluations and identify a preferred site and route alternative. Committee resolution passed.

December, 1979

- Presentation to Elliot Lake Planning Board by citizens' committee representative to explain the committee's recommendation of Site C.

- Resolution by Planning Board and formal approval by Elliot Lake Council, supporting Site "C" as the preferred site alternative and the proposal to parallel the existing right-of-way on the east side.

January, 1980

- Status Report No. 3 – outlining the study evaluations and identifying the proposed site and route was distributed to the study contact list for comment before submission of a final recommendation to government. Copies made available to the public at the Hydro information kiosk and the local Hydro office.
- Press release issued, identifying the proposed study alternatives and inviting public feedback.

Fall, 1980

- Letter outlining final study recommendation, review process, future study activities and a copy of the route and site selection report was sent to the local MP, MPP, municipal officials, provincial ministry representatives, property owners and the local media. The report was also made available to other interested groups and individuals upon request.
- Press release was issued to the local media to inform the public of the study recommendations and outline future activities.

Algoma TS to New Elliot Lake TS Study
Citizens' Committee Resolution

"The citizens' liaison committee recommend Site "C" as the preferred transformer station site alternative."

Moved by: Bob Manuel

Seconded by: Ruben Juuti

Unanimously approved
Wednesday, November 21, 1979

MUNICIPAL OFFICE
45 HILLSIDE DR N

THE CORPORATION OF THE
ELLIOT LAKE

ELLIOT LAKE, ONTARIO, P5A 1X
TELEPHONE (705) 848-2288

TOWN OF ELLIOT LAKE

Office of The
Clerk

December 31, 1979.

Ms. D. A. Cook
Community Relations Field Officer
Route and Site Selection Division
Ontario Hydro
700 University Avenue
TORONTO, Ontario
M5G 1X6

Dear Ms. Cook:

RE: HYDRO TRANSFORMER STATION SITE SELECTION

We are pleased to advise that at their regular meeting held December 27, 1979, Council passed Resolution No. 1063/79 which reads as follows:

Resolution No. 1063/79

"That Ontario Hydro be advised that this Council is in agreement with the Hydro Transformer Station being established at Site Selection "C" in the Porridge Lake Neighbourhood, as recommended by the Citizen's Liaison Committee".

The foregoing is submitted for your information.

Yours very truly,

J. S. Bloom
Clerk

JSB/dmv

ELLIOT LAKE PLANNING BOARD
ELLIOT LAKE, ONTARIO

MUNICIPAL OFFICE
ELLIOT LAKE

TELEPHONE 848-2288

19 December, 1979

Mr. J. S. Bloom, Clerk
The Town of Elliot Lake
45 Hillside Drive North
Elliot Lake, Ontario

Dear Mr. Bloom:

SUBJECT: HYDRO TRANSFORMER STATION SITE SELECTION

Please be advised that at the regular meeting of the Elliot Lake Planning Board held on Monday, December, 17, 1979, members of the Citizens' Liaison Committee for the establishment of hydro transmission lines and transformer stations were in attendance.

After a presentation by their spokesman, Mr. William Kidd, the following resolution was passed:

Moved by: Mr. E. Massicotte
Seconded by: Mrs. D. Sinclair
That Council be advised that the Elliot Lake Planning Board are in agreeance with the Hydro Transformer Station being established at Site Selection "C", in the Porridge Lake Neighbourhood, as recommended by the Citizens' Liaison Committee.
Carried Resolution #130/79

Attached for your information is a map that outlines the location of Site Selection "C".

Yours truly,

for L. L. Valley
Secretary-Treasurer
LLV/sjy
ref. file #16:27:20
cc: Ms. D. Cook

APPENDIX F
Related Studies

At the present time two other studies are currently in progress in the area associated with the subject of this report.

Hanmer TS x Mississagi TS

To meet the forecast growth of loads in the Algoma area, increasing purchases by the Great Lakes Power Company and continuing transfers to the Thunder Bay area, there is a need to reinforce the transmission capability between the Sudbury and Algoma areas by 1985. Studies are therefore being conducted to locate a new transmission line between Hanmer TS (north of Sudbury) and Mississagi TS (northwest of Blind River). The bands under study for the proposed facilities are shown in Figure 15. It is expected that the study's environmental assessment report will be completed by August, 1981.

Elliot Lake TS x Quirke Lake Junction

The forecast increased electrical loads for the mining companies in the Quirke Lake area indicate that the existing single circuit 115 kV transmission line between Elliot Lake TS and Quirke Lake TS is expected to become inadequate by 1981. During 1978–79 Ontario Hydro undertook studies to meet these forecast loads and concluded that an additional transmission line should be built between Elliot Lake TS and a point near Quirke Lake TS, (Figure 16). An Environmental Assessment report was submitted to the provincial government in August, 1979 and approval is being obtained.

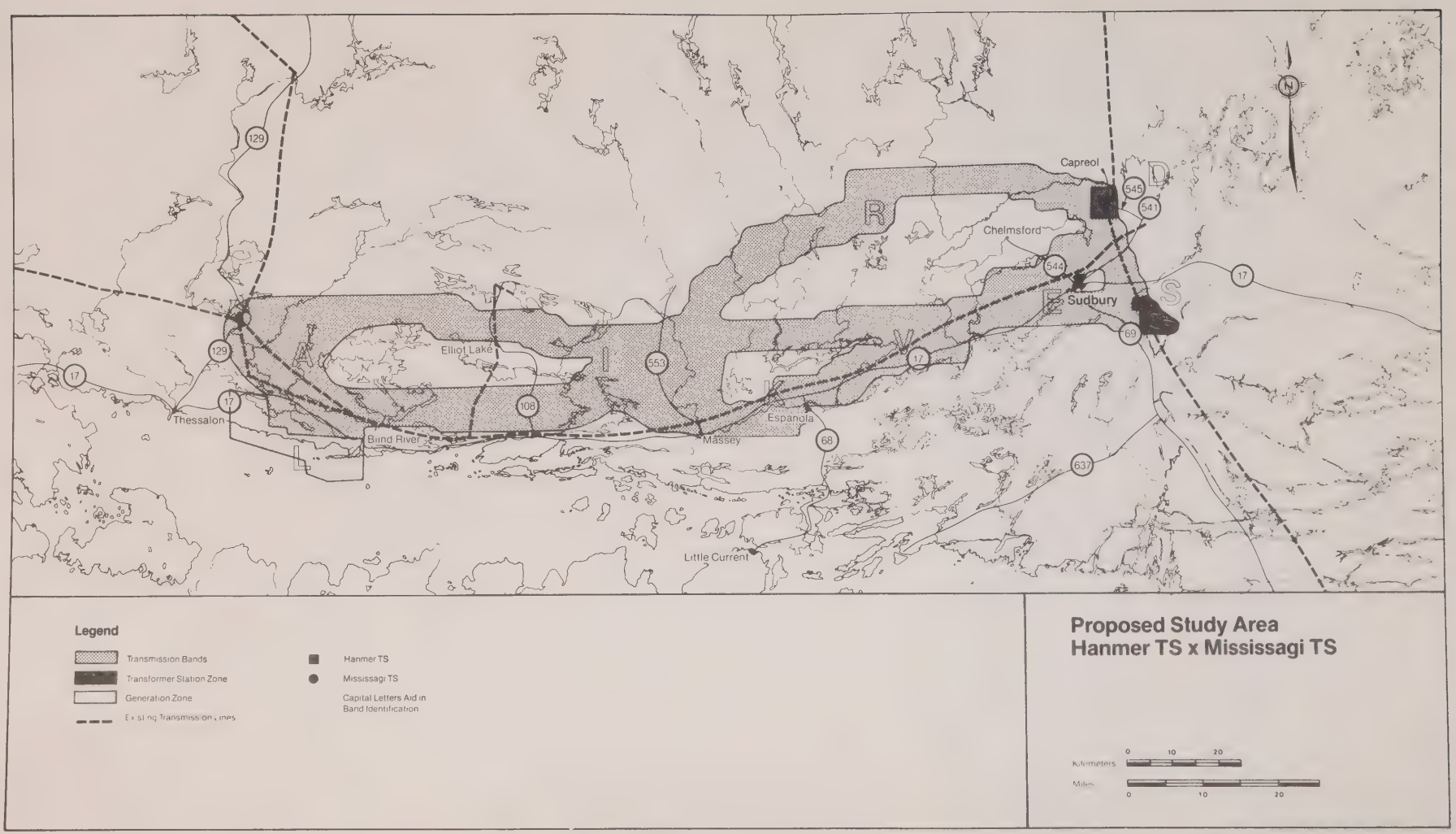


Figure 15 Proposed Study Area
Hanmer TS x Mississagi TS

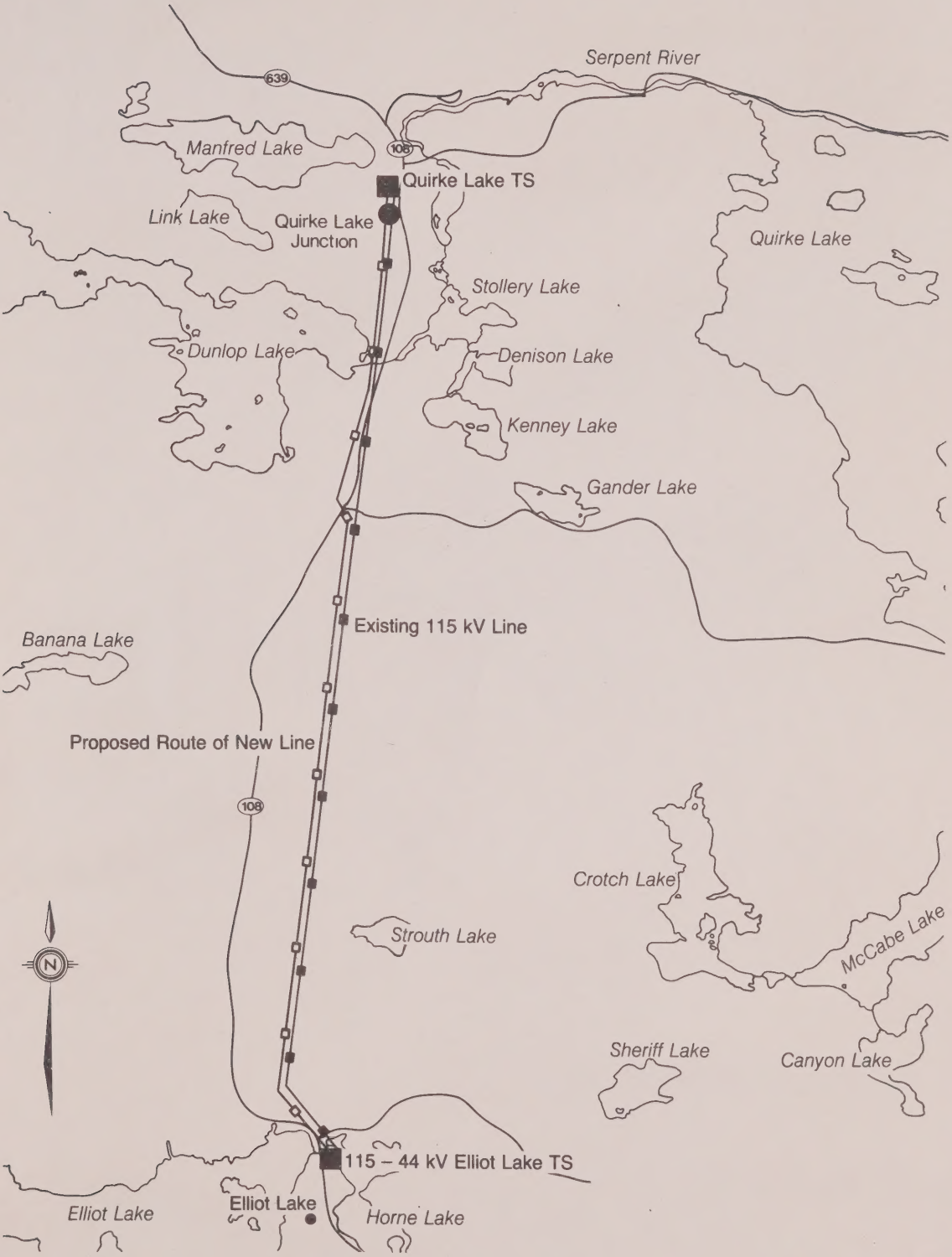


**Figure 16 Proposed Route -
Elliot Lake TS x Quirke Lake TS**

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